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# THE AMERICAN JOURNAL OF PSYCHIATRY

## DEVELOPMENT OF STATISTICS OF MENTAL DISEASE IN THE UNITED STATES DURING THE PAST CENTURY<sup>1</sup>

HORATIO M. POLLOCK, PH. D.

In the early days of asylum care of the insane in the United States little thought was given to the matter of statistical records or statistical reports. Patients admitted to institutions were usually recorded in a book in chronological order and in some cases the age, nativity and place of residence was noted. When a patient died or was discharged, appropriate notations were made in the book of admissions, or separate books for recording discharges and deaths were used. Some of the larger asylums used a census book which showed the daily number of patients in residence and of admissions, discharges and deaths. Usually a brief sta-

He analyzed separately 594 cases of delirium tremens, as he felt that these cases could not be properly included among the insane. He makes the following observation:

It has already been observed that delirium tremens is not usually considered as ranking under the general head of insanity proper. What opinion soever may be entertained upon this subject, the malady is so different from ordinary mental alienation, in both its characteristics and its duration, that the therapeutic principles adapted to the treatment of the former are entirely inapplicable to the latter. Hence . . . we have ever held the opinion—and it has been very strongly confirmed by the practical observation of several years; that cases of delirium tremens ought not to be admitted into institutions intended for the insane (2).

PATIENTS AFFLICTED WITH MELANCHOLIA AND MANIA ADMITTED INTO AND DISCHARGED FROM THE NEW YORK HOSPITAL, FOR THE YEAR 1808

	Admissions				Discharges				Remaining December 31, 1808
	Remaining December 31, 1807	Admitted in 1808	Total for 1808	Cured	Relieved	Request	Incurable	Disorderly	
Mania . . . . .	22	65	87	13	10	15	..	1	43
Melancholia . . . . .	2	1	3	3	..	..	..	..	3

stistical account of patients treated would be made at the end of each year in the annual report to boards of governors or boards of supervisors or state legislatures. The following table of movement of institutional patients affords a good illustration of the better type of statistical reports in the early days of the 19th century (1).

In 1848, Dr. Pliny Earle, physician in charge of Bloomingdale Asylum, published a voluminous statistical study of admissions from June 1, 1821, to December 31, 1844.

<sup>1</sup> The writer gratefully acknowledges the assistance of Karl L. Brooks and Miss Mary A. Cooney in the preparation of this article.

This article, written by Dr. Pollock on request, covers a very momentous development in psychiatry during the past century. It supplements the material gathered together in the Centenary number of the JOURNAL.—Editor.

The rest of Dr. Earle's book, some 84 pages, dealt with what he termed cases of insanity of which there were 1,841 cases. To discover the effect of the several seasons on mental conditions he compiled data of admission by months for the years 1841-1844, from which he concluded that the largest number of admissions occurred in summer, the second largest in spring, the third in autumn and the least in winter. With respect to nativity he found that of the 1,712 ascertained cases, 1,271 were born in the United States while 441 were immigrants from other countries. Of the latter the largest number were from Ireland, the next from England, the third from Scotland, the fourth from France and the fifth from Germany. He made no attempt to calculate rates of admissions of the several

nativity groups based on the general population of those groups. In studying the ages of patients he arrived at the following unwarranted conclusions:

According to these data, then, the liability to mental derangement is greatest between the ages of thirty and forty years, although it is nearly as great between twenty and thirty; and in the more advanced stages of life that liability rapidly diminishes(3).

It was later found that the rate of mental disease increases with advancing age.

Earle also analyzed the supposed causes of insanity, the forms of mental disease, previous attacks, suicidal and homicidal tendencies, conditions of patients on discharge, term of residence in the asylum, recovery as related to age, elopement, readmissions and mortality(4). Altogether his book was an excellent production although many of his conclusions could not be considered valid today (1944).

In 1843 the first New York State Asylum for the Insane was opened at Utica with Amariah Brigham as superintendent. His first report contains some statistical tables including movement of patients, monthly admissions, county of residence of patients, ages on admission, civil condition, occupation, nativity and causes of insanity. These tables set a pattern for statistical reporting by institutions which was widely followed.

Dr. Brigham emphasized the importance of weight as a health factor. His report states(5):

Evidence of the general good health of our patients will be found in the following table. We have practiced weighing each patient soon after admission, and again the first day of each month, and when discharged:

Total weight, on admission, of 276 patients .....	34,856 lbs.
Total weight of those discharged and remaining Dec. 1.....	35,885 lbs.
Increase in weight of all received .....	1,029 lbs.
Total weight of men on admission .....	20,440 lbs.
Total weight of men at the end of the year and when discharged ..	20,981 lbs.
Increase .....	541 lbs.
Average weight of men on admission .....	138 lbs.
Average weight of men at the end of the year, and when discharged ..	141 lbs. 10 oz.
Total weight of women on admission .....	14,416 lbs.

Total weight of women at the end of the year and when discharged 14,904 lbs.

Increase .....	488 lbs.
Average weight of women on admission .....	112 lbs. 10 oz.
Average weight of women at the end of the year and when discharged ..	116 lbs. 7 oz.

Meanwhile the subject of statistics was beginning to receive increased attention in the *American Journal of Insanity*. In January 1845 an article appeared on "Statistics of Suicides in the United States," by Dr. E. K. Hunt of Connecticut(6). The April 1849 number contained a letter from M. Baillarger, editor of the *Annales Médico-Psychologiques*, to M. Renaudin, director of the Asylum for the Insane at Paris, France. This letter, which dealt with statistics, was translated by an inmate of the New York State Lunatic Asylum at Utica. M. Baillarger pointed out two facts which he considered pertinent to the subject.

Statistical researches have doubtless rendered great service to the study of mental diseases; but, confined of late years in a circle consecrated by habit, they have ceased, in my opinion, to be so useful. If you examine most of the works of this kind, you will find that new facts are very rare.

I do not deny that there have been some happy innovations; nor do I pretend to say that statistical notices on asylums are all alike; but these innovations—of no great importance—are made by isolated individuals, and however numerous the patients may be in an asylum, the facts that a single physician may record cannot produce any definite results.

Besides, these researches have often their starting point from peculiar opinions.

Suppose, for instance, you undertake to establish by statistics the relative proportion of different kinds of insanity, you perceive that it is necessary, in the first place, to adopt a classification. Now if that classification differs from that which is generally admitted, it will be necessary to repeat researches, and adopt also the new classification.

Again, these works rest on too few facts; they often bear a character of individuality, which renders them incomparable with those which have been undertaken on another basis.

There are, then, two unfavorable circumstances for statistical researches, applied to insanity: these are, on the one hand, that they have a general tendency to the same point,—and on the other, that the new questions which they raise (too rarely, moreover) are studied by a single individual, and produce results which are founded on too few facts. Besides, these researches, undertaken sometimes from very different opinions, are exceedingly difficult to be compared with each other(7).

Dr. Isaac Ray, superintendent of Butler Hospital for the Insane at Providence, R. I., discussed the problems of statistics in connection with mental diseases at a meeting of the Association of Medical Superintendents of American Institutions for the Insane in May 1849. The two opening paragraphs of his paper presented a general view of the problem as it then stood:

FEW PERSONS, I believe, who are practically acquainted with the subject, are quite satisfied with the present methods of reporting the results of management in hospitals for the insane, or are prepared to yield entire confidence in the general conclusions to which they lead. Certainly the wish has often been expressed that greater uniformity were observed in these methods, and that certain conditions and events connected with the subject, were more accurately defined. The evil in question has often been deplored by writers who have the strongest and most enlightened faith in the utility of this kind of statistics, and until it is remedied, our most carefully elaborated conclusions can challenge but little confidence, and we never can be sure, after all our pains, that we have made any positive advances in knowledge. General rules and principles, that are fairly drawn from observations, have always been regarded as preeminently safe, and this strictly inductive method of inquiry is now universally considered as the most effectual means of arriving at the truth. It would seem as if results like these could not be otherwise than correct, because they are but the general expression of the facts themselves. It is this very appearance of certainty which sometimes, as in the present case, blinds us to the actual fallacy, and we go on accumulating and hugging our treasures of knowledge as we fancy them, until we find at last that we have been ingeniously deceiving ourselves with an empty show, while the substance has completely escaped us.

Statistics have become a favorite instrument for developing truth, and is now applied to branches of inquiry which, a few years since, were scarcely supposed to be within its reach. That it was capable of eliciting physical truth with an extent and accuracy then not thought of, might not have been a wild supposition, but no one dreamed of seeing it used to elucidate the principles that govern the social position and moral conduct of man, his motives, impulses and propensities. It is important that an instrument of knowledge so widely and confidently used, should be thoroughly understood; its powers being judiciously estimated, and its application regulated by a suitable regard to the conditions of the case. It is a simple thing, no doubt, to add, and subtract, and divide columns of figures which a patient industry alone was needed to collect, and if statistics consisted only of these operations, it certainly would be a very easy affair. But statistics implies something more than a process of arithmetic. It is a profound, philosophical analysis of materials carefully and

copiously collected, and chosen with an enlightened confidence in their fitness for the purpose in question. The large comprehension, the elevated conceptions, the masterly power of mathematical analysis, were not more essential to Newton in unfolding the law of gravitation, than the acute discrimination of his materials and the correct appreciation of their bearing upon the principle in view, were to Quetelet in developing the laws that regulate some important events of life and springs of human conduct. Such views, however have not been prevalent, and hence has arisen the fact that thus far, statistics, with all its show of accuracy, has been, comparatively speaking, singularly barren of results . . . .

Dr. Ray condemned some aspects of the Federal Census of 1840, saying that it comprised a large mass of heterogeneous details gathered by a multitude of individuals "few of whom could comprehend their nature, or had the requisite skill for assorting and classifying their materials." From data on the incidence of insanity it was concluded that "the free colored population is more liable to insanity than the white," an inference held up by "one of our most distinguished statesmen, as a signal blessing of slavery."

Equally fallacious, said Ray, were many of the statistics published annually in the reports of hospitals for the insane. As a first step in clearing a path through the debris, he suggested that "to make our statistics profitable, they should embrace such facts only as are intrinsically important, and free from all admixture with mere opinion."

He discussed the reporting of recoveries and pointed out the difficulty of securing comparative data that would represent the relative success of the institutions in the treatment of mental cases and added this caustic remark: "To regard the narratives we usually receive with our patients, as sufficient authority for a scientific fact, would almost indicate insanity in ourselves." From the data presented in hospital reports on the subject of recoveries, Dr. Ray could draw but one conclusion, that the number of recoveries was a strong indication of the financial difficulty of friends and relatives of the patients and their perseverance in getting their friends discharged, thus "any degree of merit which may accrue from the number of recoveries must be shared by the institution with the community itself."

With respect to statistical tables of deaths in reports of hospitals for the insane Ray wrote:

.... To show the proportion of deaths to the admissions or discharges, is to indicate nothing in relation to insanity, beyond the two naked facts, that a certain number entered or left the institution, and a certain number died. The absurdity of connecting together such incongruous facts as the deaths of certain persons with the casual residence of certain others in the same place, is strongly illustrated by the practical result. At the Salpêtrière, for a certain term of years, the deaths were equal to 26 per cent. Of the admissions, while in many American institutions, the proportion, up to the last year, has been between 8 and 9 per cent. Are we to infer from this fact, that insanity is three times as fatal at Paris as in America, or that the physicians of the latter establishments have been three times as successful as those of the former, in rescuing their patients from the jaws of the fell destroyer? If the facts will bear neither of these inferences, what are they good for? (8).

At the 10th annual meeting of the Association of Medical Superintendents held at Boston in May 1855, Dr. T. R. S. Smith of the State Lunatic Asylum at Fulton, Mo., offered the following resolution:

*Resolved*, That a committee of three be appointed to investigate the propriety of adopting a uniformity in our statistical reports; and, if regarded important, to report to the next meeting of the Association some way in which the object may be secured.

Dr. Luther V. Bell, president of the Association, remembered that Dr. Earle had early brought the matter before the Association. He had even prepared a form but no one ever followed it in making a report. The chief difficulty seemed to be that what some considered as matters of opinion, others put down as matters of fact. Bell suggested that, instead of being presented every year, these matters of fact should be permitted to accumulate for a few years. It would then be possible to study the facts and draw therefrom some reliable general results as Dr. Earle had done in his work in the Bloomingdale Asylum. Bell stated further that he could see no reason to change his views as to the worthlessness and inexpediency of attempting to present statistical facts of the hospitals for the insane; these attempts produced "unjust inferences as to different institutions and untrue expectations in the public mind." Older members of

the Association had discussed the subject, and various committees had unsuccessfully tried to bring about some uniform method of reporting results.

Dr. Smith still thought that some system of uniformity might possibly be secured and since there was no general feeling against another attempt, the resolution was adopted. The Chair appointed Drs. T. R. S. Smith of Missouri, John Curwen of Pennsylvania and John E. Tyler of New Hampshire to constitute the committee (9). This action produced nothing by way of positive developments, however, for the next year,

Dr. Smith, from the committee on securing uniformity in statistical tables in the reports of different institutions, stated that they were not prepared to give a written report, but were of the opinion that uniformity on such subjects could not be obtained. A long discussion rose on the general subject of statistics and their value, upon which the members expressed their views very freely (10).

The subject came up again in 1869 when Dr. Charles H. Nichols, superintendent of the Government Hospital for the Insane at Washington, D. C., presented a project for uniform records and statistics of institutionalized patients, which had been approved by the International Congress of Alienists of 1867. These recommendations were referred to a special committee consisting of Drs. Edward Jarvis, Charles H. Nichols and F. S. Stribling. In reporting back to the Association next day, Dr. Jarvis asked that more time be granted and that they be permitted to make a full report at the next annual meeting. Meanwhile, he suggested that although the proposition put before them for reporting the history, progress and condition of insane hospitals was "admirable, and worthy of our most careful consideration, and should be adopted, as far as possible, by the American institutions," yet the committee was

.... not prepared to recommend that these plans, forms and tables, and these only, be adopted by our hospitals. These are suited to the European asylums. They include all their wants and represent their conditions. But the plan should be modified in some respects to suit the peculiarities of our country, without omitting any of the principles or important features proposed by the International Association.

It was proposed, therefore, to publish the translation of the French report in the

*American Journal of Insanity* so that all members could study the proposition while the special committee considered and proposed a plan of reporting which would "both include the principles of the European plan, and also represent the peculiar conditions and wants of the American hospitals" (11).

The International Congress of Alienists of 1867, in the report above referred to, proposed 31 tables covering resident population, admissions, discharges, deaths, duration of the disease, months of admission, civil status, education, age, aggravating circumstances, supposed causes, occupations, etc. (12). After a careful study of these suggestions the committee on statistics of the Association of Medical Superintendents listed some 33 tables which they thought desirable (13). The report of the committee was ordered printed and a copy forwarded to each member of the Association so that the subject might be discussed at the next meeting (14).

These 33 tables were carefully studied, compared with the tables of the Medico-Psychological Association of England and boiled down somewhat, for Dr. James R. DeWolf, discussing the committee's report stated:

By carefully collating these several sets of tables, abridging the more elaborate and simplifying others, it has been found practicable to condense into a series of twenty (20) concise and easily prepared tables all the information usually given, and perhaps all that may be considered really essential.

The absence of any other data plus the fact that the titles of these 20 tables, together with forms to be used in compiling data for publication, were published in the minutes of the Association leads to the conclusion that it was this set which was brought up for general discussion. The titles of these tables follow:

1. Admissions and General Results for the Year.
2. Admissions and Discharges from Opening of Hospital.
3. Operations of Hospital Year by Year.
4. History of Annual Admissions.
5. Age and Condition as to Marriage of all Admitted, Recovered, Died and Remaining.
6. Nativity of all . . . .
7. Residence of all . . . .
8. Occupation of all . . . .
9. Maintenance of all . . . .
10. Causes of Insanity of all . . . .

11. Form of Disease of all . . . .
12. Age and Condition as to Marriage at *first attack* of all . . . .
13. Number of Previous Attacks and Duration of Disease before Admission of all . . . .
14. Duration of Insanity, Before Admission in all . . . .
15. Months of Admission, Recovery, and Death.
16. Duration of Treatment, Recovery, Death, and Remaining.
17. Whole Duration of Disease, Recovery, Death, and Remaining.
18. Causes of Death Year by Year.
19. Annual Expenditure and Average.
20. Annual Receipts.

After a lengthy discussion in which the pros and cons of compiling statistical data were well aired, it was finally "*Resolved*, That the report of the committee be recommended as the basis on which the different statistics of the hospitals be made" (15).

The Association had no power to compel action, however; indeed many members looked upon the project with some disfavor if not active hostility. It is not surprising, therefore, that the subject of statistics continued to be something of an individual affair, each superintendent making little or much of it as he felt inclined. Actually little really scientific work was done in the field of statistics of mental disease during practically the whole of the 19th century.

At the June 1885 meeting of the Association Dr. Daniel Clark, superintendent of the Asylum for the Insane at Toronto, Ontario, suggested that a committee be appointed to devise a uniform system of tabulating post-mortems; that it should embrace the important points in the clinical history as well, and that with the use of such printed schedules accurate records of such work be kept at each hospital. A committee consisting of Drs. Clark, J. B. Andrews, superintendent of Buffalo State Asylum, and S. S. Schultz, superintendent of Dansville State Hospital, was appointed. When later the problem of uniform statistics arose and it was suggested that the Association "might very readily agree upon a tabulation of certain results, or facts, which would give in a few years an immense reservoir from which we can draw very important truths," the committee was enlarged by the addition of two members, Drs. Theodore W. Fisher, superintendent of Boston Lunatic Hospital,

and P. Bryce, superintendent of Tuskaloosa Hospital for the Insane(16).

At the next meeting of the Association, May 1886, Dr. Clark was unable to be present and no report had been sent in.

There was also no report either at the 1887 or the 1888 meeting, and it was each time suggested that the committee be continued for another year(17).

In 1889, Dr. H. E. Allison, assistant physician at the Willard Asylum for the Insane, read a paper entitled "A General System of Reporting Autopsies in American Asylums," thus reopening the entire question. During the discussion which followed, Dr. Clark of Toronto remarked:

.... I endeavored to interest the members in this direction two years ago at our meeting held in Detroit. A committee was appointed at the time consisting of three members, but no two of us could agree as to the best methods to adopt in tabulating postmortems and in keeping records of the physical, physiological and diseased conditions of patients before death as known in their life history. Each one of the members thought his own method was the best, hence there was no agreement and no report. ....

As the original committee apparently no longer existed a new committee was appointed(18). When this committee finally made a report in 1890, it was thought "not advisable to make any attempt to tabulate the results of autopsies in any uniform set of tables, as has sometimes been suggested both in asylums and general hospitals." No mention whatever was made of general statistics, and another opportunity was lost for developing a uniform system of nomenclature(19).

It was not until 1913 that the Association began to make definite progress toward uniform statistics of mental disease. In that year Dr. James V. May, medical member of the New York State Hospital Commission, read a paper on statistics at the annual meeting at Niagara Falls, Canada. Dr. May said in part:

As a result of the various forms of supervisions in the different parts of the country, there are almost as many methods of administration. There is a corresponding lack of uniformity in policy from a medical point of view. In no way can this be better illustrated than by the annual reports of the various institutions and the accompanying statistical tables. These reports usually show the

changes in population, with the number of admissions, readmissions, transfers, discharges, deaths, etc. The statistical tables used by the New York State Hospital Commission until recently have included . . . [some 28 tables] which may be considered as fairly representative of those usually published. ....

While it is conceded that such tables should be printed for various reasons in the annual reports, they still leave much to be desired. An inspection of the statistics as published by State boards or commissions will show that they contain much food for thought from an administrative and financial point of view, but very little that is of value as far as advancing our knowledge of psychiatry is concerned. Full information is to be found regarding the age, sex, race, color, civil condition, environment, birthplace, residence and education of the patient, but comparatively little light is to be obtained as to the exact nature of the psychosis represented. When any effort is made in this direction, the results are usually characterized by striking irregularity of methods of classification in the various localities. Some still follow classifications in vogue twenty or thirty years ago; others have adopted various modifications of Kraepelin's ideas, while the great majority give no information whatever regarding the various forms of insanity. ....

The recovery rate has been estimated as based on the number admitted for the year, the average daily population, the whole number treated, the number discharged and the rate per thousand or ten thousand of the admissions, etc. All of these methods are, to say the least, unreliable, if not absolutely misleading. .... It would be highly desirable if, from a given thousand or ten thousand consecutive admissions, accurate and definite reports could be obtained showing how many are discharged improved or recovered, how many die, and what percentage become permanent residents of our chronic wards. Only such statistics can accurately determine the real recovery rate or give us any definite idea as to the ultimate disposition of the cases admitted. In spite of the great wealth of material for study in our institutions, we have comparatively little information as to the definite percentage of the different psychoses represented in admissions or discharges. The 1911-1912 report of the New York state hospitals shows for the first time the various subdivisions of the different psychoses included in the first admissions.

These and other considerations led Dr. May to make the following plea:

.... In conclusion, I would strongly urge upon the American Medico-Psychological Association, as the only national organization interested exclusively in the study of insanity, the advisability of undertaking the preparation of a uniform method of statistical study for adoption by the various administrative boards connected with the different states and provinces(20).

In response the Association appointed the following committee to study the problem of

rearranging and making the statistical reports uniform in the different states: Drs. Thomas W. Salmon of New York, Owen Copp of Pennsylvania, E. Stanley Abbot of Massachusetts, James V. May of New York, and Henry A. Cotton of New Jersey (21).

During the next year the committee met several times and began the formulation of a detailed classification of mental diseases and a plan of uniform statistics of the operations of mental hospitals. Dr. Horatio M. Pollock, statistician of the New York State Hospital Commission, served as statistical adviser to the committee, and Dr. August Hoch, director of the Psychiatric Institute of the New York state hospitals, aided the committee in its struggles with classification. The committee made a progress report in 1914 and was continued (22). Owing to the outbreak of war in Europe, which necessitated the absence of the chairman, the committee was not able to make its next report until the 1917 meeting of the Association. It then reported that the following topics had received careful consideration.

1. The desirability of uniform statistics relative to mental diseases and the operation of institutions for the insane.
2. The classification of mental diseases.
3. Forms to be used in reporting statistical data.
4. Means to be adopted to secure uniform statistical reports.

Concerning the first topic, the committee reported as follows:

That the statistical data annually compiled by the various institutions for the insane throughout the country should be uniform in plan and scope is no longer open to question. The lack of such uniformity makes it absolutely impossible at the present time to collect comparative statistics concerning mental diseases in different states and countries, and extremely difficult to secure comparative data relative to movement of patients, administration, and cost of maintenance and additions. The importance and need of some system whereby uniformity in reports would be secured have been repeatedly emphasized by officers and members of this Association, by statisticians of the United States Census Bureau, by editors of psychiatric journals, and by administrative officials in various states. We should know accurately the forms of mental disease occurring in all parts of the country; we should know the movement of patients in every hospital for the insane; we should know the cost of maintenance of patients and the amount spent for additions and improvements in every state hospital;

we should be able to compile annually complete data concerning these and other matters, and compute rates and draw comparisons therefrom. Such data would serve as the basis for constructive work in raising the standard of care of the insane; as a guide for preventive effort, and as an aid to the progress of psychiatry.

In considering the second topic, the committee felt that the first requisite in establishing a uniform system of statistics was the setting up of a standard nomenclature of mental diseases. As the situation in this respect then stood, it could be called nothing less than chaotic since some states used no well-defined system of classification, while in others the systems were similar but differed enough to make comparisons difficult; some states had adopted a uniform system throughout, while others left the matter entirely to the separate hospitals. In forming a more modern classification, the committee had studied the systems used by the different states as well as the recommendations of leading psychiatrists. The classification finally adopted was considered by the committee as "simple, comprehensive and complete"; the members had endeavored to formulate a system that would meet the scientific demands of the day and could be used by every hospital in the country. The principal groups set forth in the classification recommended by the committee were as follows:

1. Traumatic psychoses.
2. Senile psychosis.
3. Psychosis with cerebral arteriosclerosis.
4. General paralysis.
5. Psychoses with cerebral syphilis.
6. Psychosis with Huntington's chorea.
7. Psychoses with brain tumor.
8. Psychoses with other brain or nervous diseases.
9. Alcoholic psychoses.
10. Psychoses due to drugs and other exogenous toxins.
11. Psychoses with pellagra.
12. Psychoses with other somatic diseases.
13. Manic-depressive psychoses.
14. Involution melancholia.
15. Dementia praecox.
16. Paranoia and paranoic conditions.
17. Psychoneuroses.
18. Psychoses with mental deficiency.
19. Psychoses with constitutional psychopathic inferiority.
20. Epileptic psychoses.
21. Undiagnosed psychoses.
22. Not insane.

The committee also outlined a set of 18 forms for uniform statistical reports from institutions for the insane. These provided for data which it thought should be compiled annually by every mental hospital for use by those interested in administration and the treatment of mental diseases:

1. General information.
2. Financial statement.
3. Movement of patients.
4. Nativity and parentage of first admission.
5. Citizenship of first admission.
6. Psychoses of first admission, types as well as principal psychoses to be designated.
7. Race of first admissions classified with reference to principal psychoses.
8. Age of first admissions classified with reference to principal psychoses.
9. Degree of education of first admissions classified with reference to principal psychoses.
10. Environment of first admissions classified with reference to principal psychoses.
11. Economic condition of first admissions classified with reference to principal psychoses.
12. Use of alcohol by first admissions classified with reference to principal psychoses.
13. Marital condition of first admissions classified with reference to principal psychoses.
14. Psychoses of readmissions, types as well as principal psychoses to be designated.
15. Discharges of patients classified with reference to principal psychoses and condition on discharge.
16. Causes of death of patients classified with reference to principal psychoses.
17. Age of patients at time of death classified with reference to principal psychoses.
18. Duration of hospital life of patients dying in hospital, classified with reference to psychoses.

#### The report was adopted.

Following the adoption of a general system of classification and a uniform statistical scheme, the chief difficulty seemed to be the securing of the general adoption of the whole system as outlined. To achieve this all-important object the committee recommended:

The first great step toward securing uniform statistical reports from all hospitals for the insane is the adoption by this Association of a classification of mental diseases and a series of forms for statistical tables. The second step will consist in making provision for the annual collection of data from hospitals throughout the country, and the publication of an annual statistical review for distribution to members of this Association. Your committee believes that such statistical work should be conducted by this Association through a committee on statistics who would employ a trained

statistician to have direct charge of the collection and tabulation of the reports from the several hospitals. The National Committee for Mental Hygiene has kindly offered to cooperate in this work by tendering the use of its statistical office to the Association. The estimated annual expense of the statistical work contemplated, including printing and postage, would be approximately \$1,800. The amount is insignificant compared with the great importance of the work to this Association, to psychiatry, to administrative officials, and to the vast army of mental sufferers.

Your committee would recommend the appointment of a standing committee on statistics, and that such committee be authorized to conduct for the Association the statistical work herein outlined during the ensuing year, and to secure, if possible, the adoption of the Association's classification of mental diseases by federal and state authorities.

In the discussion following the submission of the report, it was thought by some that possibly the recommendation that a statistical bureau be established was not essential at this time. Dr. Lloyd Vernon Briggs of Massachusetts spoke of the necessity for immediate action so that at the end of the war there would be one uniform set of records from which a complete psychiatric history of the war might be compiled. There was also some complaint that the system of classification was too complicated. In the end, however, it was resolved

... that a standing committee on statistics, to be composed of seven members, be appointed by the President, to promote the general adoption of the Association's classification of mental diseases and statistical tables and from time to time to recommend to the Association such revisions as may be necessary.

Drs. Thomas W. Salmon, Adolf Meyer, Albert M. Barrett, E. Stanley Abbot, George H. Kirby, Owen Copp and James V. May were appointed members of such standing committee (23).

Much was accomplished in the ensuing year in spite of the fact that Colonel Salmon, chairman, and Major Abbot were prevented from actively participating in the work of the committee by reason of military service. Colonel Salmon was influential, however, in securing from the Rockefeller Foundation a special grant for the National Committee for Mental Hygiene to defray the expense of introducing the system of uniform statistics. Since the National Committee had the necessary funds at its disposal and had established a bureau of statistics, the committee

of the Association thought it wise to become an advisory body to that bureau and to have it carry on the work of introducing the new system and of collecting statistics from the institutions. For this task the National Committee assigned Edith M. Furbush as statistician with Horatio M. Pollock as consultant. Under the chairmanship of Dr. Albert M. Barrett, director of the Psychopathic Hospital at Ann Arbor, and professor of psychiatry at the University of Michigan, a letter explaining the proposed system of classification was mailed in April 1918 to the superintendent of every state hospital and to the central board of administration in each state which had not already stated its intention of adopting the classification. By the following June 138 state hospitals had signified their willingness to cooperate. The Surgeon General of the Army had adopted the Association's classification, and 32 of the 48 states had fully committed themselves to the uniform system. The 18 forms for statistical tables adopted by the Association were printed (June 1918) for distribution to institutions without charge by the bureau of statistics of the National Committee for Mental Hygiene. The officers of the bureau, in cooperation with the members of the committee of the Association, also prepared a statistical manual for the use of hospitals for the mentally ill to serve as a guide in the preparation of statistical data(24).

During the year following the committee continued its work and on June 19, 1919, was able to report that 145 of the 156 state hospitals had adopted the Association's classification of mental diseases and were using, in part at least, the uniform statistical system. Many of the larger county and private institutions had also adopted the classification. During the summer of 1918 complete sets of the tabular forms and the statistical manuals had been distributed to all state and county hospitals and to the larger private institutions devoted to the treatment of mental disease. Standard sets of statistical schedules had also been prepared and were distributed at cost. In order to make a preliminary statistical review the bureau of statistics asked for data specified on the first three statistical forms (general information, financial statement and move-

ment of population). Though the bureau also requested complete sets of tables from all institutions which had used the system for a year, it was felt that since many hospitals did not begin to use the new classification until late in 1918, it would not be possible to secure complete reports during 1919. The committee of the Association recommended that the members continue their cooperation with the National Committee for Mental Hygiene, for they felt that only through complete cooperation could good results be achieved(25).

In 1920 the committee broadened the scope of its work and voted that a separate group of statistics be kept for psychopathic hospitals, psychopathic wards and other institutions for temporary care; that a subcommittee of three outline a system of records for clinics; that they cooperate with the Committee on Classification and Uniform Statistics of the American Association for the Study of the Feeble-minded in order to secure uniform statistics for the feeble-minded; and that they invite the National Association for the Study of Epilepsy to appoint a committee to confer with it on the subject of uniform statistics of convulsive disorders. In addition the committee made the following important recommendation:

.... that central statistical offices be established by .... state supervising departments having authority over state hospitals for mental diseases. Such central bureau would receive a statistical card report for each patient received, discharged or deceased, and [would] compile from these cards the annual statistical tables for each hospital for mental diseases in the state. This bureau would also prepare other tables concerning the general operation of the hospitals. There are several advantages of this method over the system of a separate compilation by each hospital. Briefly, these are: (1) the possibility of employing a trained statistician, (2) uniform method of preparation of statistics, (3) greater accessibility of data, and (4) the cumulation of a larger amount of uniform statistical material from which special studies can be made(26).

Reports received by the National Committee for Mental Hygiene for the year 1920 made it possible for Pollock and Furbush to make a study of 21,742 first admissions to 72 hospitals in 26 different states.

Stimulated by the National Committee for Mental Hygiene, the American Association for the Study of the Feeble-minded

launched in 1920 a movement to secure uniform statistics of mental deficiency in institutions for mental defectives.

In 1921 the Committee on Statistics of The American Psychiatric Association, under the leadership of Dr. James V. May, superintendent of the Boston State Hospital, recommended that the Federal Census Bureau use statistical tables corresponding to those adopted by the Association in making its next institutional census. A sub-committee of the Committee on Statistics made some suggestions concerning the classification of patients treated in out-patient departments, though it felt that it was not wise to make any recommendations regarding the standardization of the general forms for clinical records beyond suggesting a general outline of items which should be recorded.

The most important development of the year 1922-1923 was the cooperation of the Federal Census Bureau with the Association and the National Committee for Mental Hygiene. At a joint conference plans were developed for a special census of hospitals for mental disease throughout the country. Horatio M. Pollock and Edith M. Furbush were appointed special agents of the Federal Census Bureau to assist the Director in planning the census and preparing the report (28). The resulting report of the census of "Patients in Hospitals for Mental Disease, 1923" gave much more information concerning mental diseases than had been given in any previous census report. (The several census reports relating to mental patients will be described in a later section of this paper.)

In 1925 the Association's Committee on Statistics recommended one addition to the set of standard tables, namely, a table to correlate age of first admission with nativity and parentage. This would also give the length of residence in this country of the foreign-born prior to admission and would furnish first-hand information for further improvements in immigration legislation and in methods of dealing with accepted immigrants.

Since Congress had not yet provided funds for the contemplated preparation by the Federal Census Bureau of an annual

statistical review of institutions in the United States, including hospitals for the mentally ill, the Association's Committee on Statistics also recommended that the Association pass a resolution requesting Congress to appropriate sufficient money to accomplish this purpose (29).

By June 1928 the American Association for the Study of Convulsive Disorders had merged with The American Psychiatric Association, thus bringing a new element into the Committee on Statistics. Even before this time (in 1927) the American Association for the Study of Convulsive Disorders had adopted in cooperation with the National Committee for Mental Hygiene and with the New York State Department of Mental Hygiene a standard classification and uniform statistical system and the Committee had prepared a statistical manual, statistical data cards and tabular forms for the use of institutions for epileptics. The manual was printed at Craig Colony, New York, and distributed free of charge; the cards and forms were printed by the National Committee for Mental Hygiene and distributed at cost (30).

By May 1929 twelve years had elapsed since The American Psychiatric Association took definite action to establish a uniform system of statistics for mental illness. In the report that year the Committee on Statistics reviewed its accomplishments during the twelve-year interval:

... it is interesting to review the present status of the Association's classification and statistical system. The classification has been officially adopted by the Federal Census Bureau, the United States Public Health Service, the Surgeon-General of the Army, the United States Veterans Bureau, and by practically all the state hospitals for mental diseases in the United States. It is being taught in courses in psychiatry in many medical schools and is given with approval in the newer American text-books in psychiatry. Unfortunately only part of the Canadian hospitals are using the classification and it has received slight recognition in European countries. A check up with reference to the Association's statistical system shows that it is used in all the state hospitals of 38 states and in part of the hospitals of six additional states. The system is also in use in 25 other hospitals for mental disease.

The successful establishment of the system has been due in part to the cooperative efforts of the members of this Association but perhaps in greater measure to the persistent follow-up work of the National Committee for Mental Hygiene.

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Thanks to the uniform system, better data relating to mental patients and to mental disease are becoming available. Central statistical offices in several states are annually publishing valuable reports in this field. The Federal Census Bureau states that data for the year 1927 were received from all of the 165 state hospitals for mental disease in the United States. It is expected that the census results for 1926 and 1927 will soon be published in a single report covering both years.

Another promising development occurred at about this time when a communication was received by The American Psychiatric Association from Dr. George Baehr, chairman of the Executive Committee of the National Conference on Nomenclature of Disease, relative to the appointment of a committee by the Association to cooperate with the Conference. The Committee on Statistics recommended to the Association that it request the American Association for the Study of the Feeble-minded to appoint one member of that Association to join with two members of the Committee on Statistics—one of whom would represent the Section on Convulsive Disorders—to cooperate with the National Conference on Nomenclature of Disease (31). Drs. James V. May and William T. Shanahan were appointed to represent the Association in the National Conference. During the following year (1929-1930) much correspondence was carried on between the two bodies relative to the place that mental disease would have in the new classification that was being prepared. It was originally proposed to classify each disease, physical and mental, both anatomically and etiologically. The representatives of the Committee on Statistics pointed out the disadvantages of merging physical and mental diseases in such a classification and proposed that the system used by the Association be kept intact. The Committee on Statistics asked The American Psychiatric Association to "request the National Conference on Nomenclature of Disease to adopt the classification of mental disease of the Association, and that in the general classification of disease, physical and mental diseases be kept separate." The Council of The American Psychiatric Association therefore voted

.... to recommend the appointment of the Chairman of the Committee on Statistics as a

voting delegate in the Conference on Nomenclature of Disease, with the power to withdraw if the conference does not accept the classification of The American Psychiatric Association as its official classification of mental diseases (32).

On November 23, 1930, Drs. James V. May and Horatio M. Pollock had a conference with Dr. H. B. Logie, executive secretary of the National Conference to discuss this problem and the following day they attended the annual meeting of the Conference. After a study of the entire situation it was found possible to incorporate the Association's classification of mental diseases in the new classification of the National Conference. In its annual report to the Association the Committee on Statistics commented:

.... This happy result was effected without compromise on the part of either organization. Your committee is fully convinced that the new classification of disease about to be promulgated by the National Conference will constitute a great forward step in medical nomenclature.

At the same time the National Conference adopted with few modifications the Association's classification of epileptics, thus enabling the Association to preserve its uniform classifications and at the same time to contribute to a much needed comprehensive classification of all known diseases (33).

Other evidences of progress were seen in the fact that the official statistical manual prepared by the Association and the National Committee for Mental Hygiene had recently been translated into French for use in Canada and that permission had been granted to translate it into Spanish for use in Latin America. There was also a general feeling that in view of the increased introduction of mental, psychiatric or psychopathic wards and departments in general hospitals and of out-patient clinics for the treatment of similar disorders, there was need of a uniform statistical system for reporting cases treated in such wards and clinics. The Committee on Statistics, therefore, suggested that the Association cooperate with other organizations in forming a group to consider such a program.

At the May-June 1932 meeting of the Association, Dr. May was elected president, and Dr. E. Stanley Abbot, consulting psychiatrist at the McLean Hospital, became chairman of the Committee on Statistics. At

the end of his year as president, Dr. May again became chairman of the committee(34).

In the year 1933-1934, the Committee on Statistics undertook the revision of the general classification of mental diseases and also made minor changes in parts of the general statistical system in order to make the hospital statistics conform more closely with the requirements of the Federal Census Bureau. After much study a detailed classification for diagnostic purposes was made up and from that classification a list of diseases was arranged for statistical use. This classification was made on an etiological basis as far as possible and the grouping adopted was made to follow the order published in the Standard Classified Nomenclature of Disease. Several changes were made in subdivisions of the various groups of psychoses. The new classification had been approved by the Council of the Association but the committee recommended that they be formally adopted by the Association as a whole.

With regard to the classification of personality disorders in children, the sub-committee reported as follows:

The Sub-committee on the Nomenclatures and Classifications Dealing with Personality Disorders in Children after considering the views of various leaders in child guidance and on the basis of their own personal experience came to the conclusion that the time was not ripe for a classification of the personality disorders of childhood; that there was too great a divergence between the formulations of those who were most interested in and most conversant with these problems; that a classification which did not have some relation to treatment and which did not do justice to the total situation would be of little use; that a classification proposed at the present time would probably only bring a specious appearance of order into a most complex field, it would give a false impression, would lend itself to abuse, would neither be of scientific validity nor of great practical value.

The Committee on Statistics made a further recommendation. In view of the fact that the Federal Census Bureau had not been adequately supplied with funds, due to the depression, the committee suggested that the Council of the Association express to the Director of the Census its appreciation of the interest he had taken in the census of institutions and to urge him to make the

published decennial statistical report relating to institutions for mental illness as complete as possible(35).

In the year 1934-1935, the name of the Committee on Statistics was changed to the Committee on Nomenclature and Statistics. The next year this committee reported that

The introduction of family care in certain states has necessitated a modification in such states of the form relating to movement of patients by providing that family care patients be reported as a separate class of patients on books. It seems desirable that such patients should not be included either with resident patients or with paroles(36).

In 1936, Dr. May's 14 years of effective service as chairman of the Committee on Statistics came to a close. At the meeting of that year Dr. Neil A. Dayton, director of statistics for the Massachusetts Commission on Mental Disease, was appointed chairman of the committee.

At the June 1938 meeting of the Association the Committee on Nomenclature and Statistics reported that a number of suggestions had been sent to the Bureau of the Census. First, that "the present separate census reports devoted to mental disorders, mental deficiency and epilepsy be enlarged to include additional data approaching the scope of the work covered in the 10-year reports" as well as expressing the hope that it might be possible to have an earlier printing of these reports. Second, it was felt that consideration should be given to the matter of color of patients in future reports since it had been found that the distribution of psychoses in the white and negro population of mental hospitals presented marked differences. Third, it was again suggested that the division of admissions into first admissions and readmissions might be extended to data covering discharges and deaths(37).

In 1942 it was reported that the Statistical Manual for the Use of Hospitals for Mental Diseases had been revised and would soon be ready for distribution. One of the problems of the time was the threat of the discontinuance of the division of the Bureau of the Census in charge of institution statistics. Protests from the Association had secured continuation of the work for the time being but there was no certainty that the division would not be dropped at a later

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date. Superintendents of all institutions were urged to preserve statistics of their own institutions as carefully as possible in order that they might be available for future studies (38). The next year, however, the committee reported that their campaign for the continuation of the publication of statistics on mental diseases, mental deficiency and epilepsy by the Bureau of the Census had been successful, for the deleted items were returned to the Census Bureau appropriations. Furthermore, plans for the publication of figures for the years 1942 and 1943 were already well in hand, though on a somewhat modest scale.

The committee recommended that the decennial census of mental hospitals due in 1943 be postponed for at least a year since rather complete data on resident population—an intricate part of the analysis—would be particularly burdensome on the mental hospitals and state schools at a time when the manpower shortage created unusual problems. There was a feeling, too, that some of the states had gone too far in war-time economies. The committee thought it highly desirable "that The American Psychiatric Association combat a newly developing trend for the elimination of annual reports of institutions and state departments," and suggested that "the Council go on record as opposing firmly the elimination of annual reports of institutions or of state departments," since the published figures of the Bureau of the Census could in no way replace the data gathered by the individual hospitals or states and since data on the war and postwar period would be even more valuable than those of some of the years past (39).

At the May, 1944, meeting of the Association it was reported that the publication of the annual statistics of mental disease, mental deficiency and epilepsy had during the past year been removed from the Division of Vital Statistics, Bureau of the Census under Halbert H. Dunn, and placed under the jurisdiction of the Division on Population under Leon E. Truesdell. Work on the 1941 and 1942 edition of Patients in Mental Institutions was already under way. The previous year's recommendation postponing

the 1943 decennial census of resident population in mental institutions was repeated on account of the war and it was suggested that no action be taken "until such time as the institutions shall have sufficient physicians and clerical workers to carry out this work in a satisfactory manner." All institutions were again urged to make every effort to preserve statistical records during the war years since it would be difficult if not impossible to bring the records up to date after the war (40).

STATISTICS OF MENTAL PATIENTS COMPILED BY THE FEDERAL BUREAU OF THE CENSUS

A second line of development of statistics of mental patients is seen in the work of the Federal Census Bureau in compiling institution statistics during the past century.

TABLE I  
DEFECTIVES IN THE UNITED STATES ENUMERATED IN FEDERAL CENSUSES, 1850-1880

Class	1880	1870	1860	1850 *
Insane .....	91,997	37,432 *	24,042 *	15,610 *
Idiots .....	76,895	24,527	18,930	15,787
Blind .....	48,928	20,320	12,658	9,794
Deaf-mutes ..	33,878	16,205	12,821	9,803
Total ...	251,608	98,484	68,451	50,994

\* These data were clearly erroneous and incomplete and were later considered worthless.

The Federal Census of 1840 was the first in which the insane and idiotic were enumerated but the two classes were not differentiated. In the census of 1850 an attempt was made for the first time to secure separate data concerning the insane, idiots, blind and deaf mutes in the country. A like attempt was made in the decennial censuses of 1860, 1870 and 1880. Table I shows the number of so-called defectives reported in the several censuses from 1850 to 1880 inclusive.

In 1880 a determined effort was made to make the census returns for the above named classes as complete as possible. Frederick Howard Wines, a distinguished statistician of Springfield, Illinois, was appointed special agent of the Census Bureau and placed in charge of the census of institutions. As

stated in the census report the method of enumeration in 1880 was as follows:

.... first, that the basis of the present investigation was a list of institutions throughout the United States, prepared with great care in advance of the actual taking of the census, so that it is demonstrable that few, if any, of the important charitable and correctional institutions of the country failed to be accurately reported. Second, a system of special schedules was devised, one for each separate class; and every enumerator was required not merely to enter upon the general population schedule the name of every defective person enumerated by him, but also to transfer the name of every such person to its appropriate special schedule, and upon that schedule to answer certain definite questions, applicable to him as a member of the class to which he was supposed to belong. For this extra service the enumerator was offered additional compensation; and it was impressed upon him that he should exert himself to find these defective persons, and make a full report of each case. He was instructed to consult with physicians upon this point, to make inquiries of neighbors, and to report all defectives, whether the information respecting them should be derived from the family to which they belonged or from other sources, if in his judgment it was worthy of confidence. By this method it was sought to obtain approximately as complete an enumeration of defectives outside of institutions as of the inmates of such institutions. Third, with respect to the idiots and the insane, the work of the enumerators was supplemented by correspondence with physicians, in all parts of the United States, to the number of nearly 100,000, all of whom were furnished with blank forms of return, and were invited and urged to report to the Census Office all idiots and lunatics within the sphere of their personal knowledge. Four-fifths of them responded to this invitation; a result which, while it redounds to the credit of the medical profession, illustrates the remarkable interest felt by the public in this census, and it is in itself a tribute to the genius of popular institutions .... (41).

Information from physicians was thus obtained concerning 17 percent of the total number of insane enumerated in 1880.

The report of the census of institutions of 1890 was prepared by Dr. John S. Billings, an eminent physician and librarian, who was then Deputy Surgeon-General of the Army. Results for 1880 and 1890, however, were not comparable. The ratio of insane in the United States per 100,000 population was given as 183.3 for 1880 and 170.0 for 1890. This apparent decrease was not a real one, being due to the fact that in 1890 physicians did not make special reports concerning the insane in the community (42). The census of 1890 was the last one in which an attempt

was made to enumerate the insane both within and outside of institutions, subsequent inquiries being confined to patients in institutions.

The special institution census of 1904 was directed by John Koren, a prominent statistician and publicist. In that year, instead of the employment of the usual enumerators, the census schedules were filled out for each institution by an employee of the institution designated as a special agent of the Bureau of the Census. Only patients resident in public or private mental hospitals or institutions having a separate department for this class of persons were included in the enumeration. The census returns for 1890 had dealt extensively with certain forms of insanity but had used an inadequate classification which was even then becoming obsolete. In 1904, however, on the advice of prominent alienists, it was decided not to attempt the enumeration of the several mental disorders as there was no standard or universally adopted classification of mental diseases in the United States.

The census of 1904 made progress in other lines. A thorough study of movement of patients in the several states was made and Koren was able to say in his report:

.... Thus, for the first time, it is possible to state with precision the annual increment in the number of insane, so far as it appears in the population of the hospitals for this class, and the number annually returned to the different communities from institutions, together with their condition at discharge.

He was also of the opinion that it had been possible to get "a more comprehensive view of the insane than of any other defective or dependent class (43).

The law providing for the Thirteenth Census in 1910 authorized an enumeration of special classes in institutions to be made in the same year. This institution census was taken under the direction of Dr. Joseph A. Hill, expert special agent of the Census Bureau, assisted by Lewis Meriam. In spite of the fact that it was impracticable to go very far towards distinguishing the different forms of insanity, an attempt was made to segregate cases of alcoholic psychosis and general paralysis from other types. The attempt was only partially successful (44).

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The American Psychiatric Association had adopted a standard classification which in part eliminated the above mentioned difficulty. By June 1922 some 147 of the 157 state hospitals were cooperating with the Association to secure uniform statistics of mental disorders. In 1923 the Association reported that:

The most important development of the year has been the action of the Federal Census Bureau, in calling upon representatives of the Association and the National Committee for Mental Hygiene to assist in formulating plans for taking a special census of institutions for mental diseases throughout the country. Members of your committee met in conference with representatives of the National Committee for Mental Hygiene and the Federal Census Bureau in December, 1922, in New York City, and discussed schedules for the taking of the census. The recommendation of your committee that mental diagnosis be included in the schedules was adopted, and the Association's classification is being used for this purpose. This action of the Census Bureau will result in making available for the first time in this country complete data concerning the various forms of mental disease in the several states. Another noteworthy improvement in the census will be the separation of readmissions and transfers from first admissions. Other features of the uniform system of the Association will be followed. This recognition of the Association on the part of the Federal Census Bureau is highly gratifying and your committee feels confident that the forthcoming census will mark a new epoch in national statistics of mental diseases (45).

Horatio M. Pollock and Edith M. Fur bush were appointed special agents of the Census Bureau to plan the enumeration and write the report. The report of the special census of the insane of 1923 was published in 1926. The data presented for resident patients related to January 1, 1923, while the figures for admissions, discharges, transfers and deaths covered the calendar year 1922. New features introduced in the 1923 census included: 1. The separation of the cases coming to institutions for mental disease for the first time, commonly designated "first admissions," from those with previous admissions, usually termed "readmissions."

2. The classification of resident patients, first admissions, readmissions, discharges, and deaths with respect to mental diagnosis.

3. Data with respect to ex-service patients in institutions for mental disease. So much public interest was manifested in the welfare of ex-service men of the World War who

had developed mental disease, that it was deemed important to secure separate data concerning them.

4. Separate data concerning patients in psychopathic wards of general hospitals.

5. Data with respect to patients on parole or otherwise absent from the institution.

6. Data relative to the administrative personnel of the state hospitals.

7. The value and acreage of state hospital plants.

8. Cost of maintenance of patients in state hospitals, exclusive of investment charges and general administration. This item was included in the census of institutions taken in 1904, but was omitted from the census of 1910. Very satisfactory data were secured for 1922 from nearly all the hospitals for mental disease, both public and private throughout the country. There can be no question that the publication of these figures for 1923 constituted a great advance in statistics of mental disease.

The American Psychiatric Association, in May 1925, went on record as favoring the annual collection of statistics in institutions for mental disease, and a general movement was inaugurated with that end in view. The matter received the approval of the Director of the Census (47) and the annual collection of data from institutions was begun in 1927 for the year of 1926, and has been continued for each year thereafter. In general the scope of the annual censuses has been similar to that of 1923 with the exception of diagnostic data pertaining to patients under treatment.

The remarkable increase in mental patients since 1880 is shown in Table 2 (see also Table 1).

#### REPORTS OF STATE DEPARTMENTS AND SPECIAL STATISTICAL STUDIES

A third line of development is found in the annual reports issued by state departments having supervision of the care of the insane, and in special statistical studies made from time to time by psychiatrists and statisticians. The New York State Hospital Commission and its successor the State Department of Mental Hygiene has issued annual reports comprising detailed statistics of patients treated in state hospitals and

licensed institutions for each year since 1908. Similar annual reports have been issued by the Massachusetts State Department of Mental Health, the Illinois Department of Public Welfare, the Ohio State Department of Public Welfare, and the Iowa Board of Control of State Institutions. Less comprehensive reports have been issued by several other state supervisory departments.

TABLE 2

PATIENTS IN HOSPITALS FOR MENTAL DISEASE AS SHOWN BY FEDERAL CENSUSES FROM 1880 THROUGH 1941 \*

Year	Population of the United States	Patients in mental hospitals	
		Number	Per 100,000 population
1880.....	50,155,783	40,942	81.6
1890.....	62,622,250	74,028	118.2
1904.....	80,651,957	150,151	186.2
1910.....	91,972,266	187,791	204.2
1923.....	110,705,086	267,617	245.0
1931.....	123,265,000	337,573	273.0
1941.....	133,669,275 †	480,741	362.4 ‡

\* Adopted from data presented in Department of Commerce, Bureau of the Census, *Patients in Hospitals for Mental Disease*, Table 1, p. 11. Washington, D. C.: Government Printing Office, 1926; *Statistical Abstract, Mental Patients in State Hospitals, 1929 and 1930*, Table 21, p. 37; *Patients in Mental Institutions*, 1941, Table 6, p. 9.

† According to the Federal Census of 1940.

‡ Based on estimated population for 1941.

Apart from official statistical reports a large number of statistical studies dealing with various aspects of mental disease have been prepared by research workers during the past 30 years. The topics dealt with comprise etiological factors including heredity, environment, alcohol, syphilis, drugs, etc.; outcome of the various mental disorders; trends in admissions and patient population; economic factors; results of special treatment and many other themes. Noteworthy examples of such special studies are included in the following books:

"New Facts on Mental Disorders," a study of 89,190 cases, by Neil A. Dayton, M. D. (Charles C. Thomas, Springfield, Ill., 1940).

"Mortality Among Patients with Mental Disease," by Benjamin Malzberg, Ph. D. (State Hospitals Press, Utica, N. Y., 1934).

"Social and Biological Aspects of Mental Disease," by Benjamin Malzberg, Ph. D. (State Hospitals Press, Utica, N. Y., 1940).

"Mental Disease and Social Welfare," by Horatio M. Pollock, Ph. D. (State Hospitals Press, Utica, N. Y., 1941).

"Hereditary and Environmental Factors in the Causation of Manic-Depressive Psychoses and Dementia Praecox," by Horatio M. Pollock, Ph. D., Benjamin Malzberg, Ph. D., and Raymond G. Fuller (State Hospitals Press, Utica, N. Y., 1939).

It is probable that the various factors relating to mental disease have been more completely studied than those relating to any form of physical disease. During the past 30 years statistics have aided greatly in the development of psychiatry and have been used extensively in the evaluation of results of treatment in various forms of mental disorders.

The American Psychiatric Association and the National Committee for Mental Hygiene may view their accomplishments in this field with great satisfaction.

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## EFFECTS OF PSYCHOLOGICAL DEPRIVATION IN INFANCY AND SUBSEQUENT STIMULATION<sup>1</sup>

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Practical work with children inevitably leaves one with a feeling of awesome respect for the profound importance of the child's nursery years. Most parents may not attain the same formal or conscious understanding of how early experience influences growth. Yet, they demonstrate their own recognition of the infinite needs of their babies when they envelop them with the comforting mantle of constant, detailed, ever ministering attention. The essential stuff of this early atmosphere is warmth and intimacy between child and parent. In the first months the child is completely dependent upon the outside world for physiological sustenance. A single mother person is generally the source of this sustenance to children in families. However, the baby's earliest and primatively differentiated concept of the mother as the object which hovers about and satisfies his craving for physical stimulation and physical satisfaction soon merges with the richer concept of the mother whose psychological presence in itself is a source of pleasure and complacency. As early as the sixth month and possibly even somewhat before, one observes the beginnings of sentiments, particularized attitudes and attachments to a particular person or limited number of people within the primary family circle (usually the father and mother). Placement observations of babies separated from the parent person at this age indicates that the children experience psychological shock which sometimes may even be prolonged in nature. Nor is the shock of separation ameliorated, for example, by the simple satisfaction of hunger. A psychological relation between child and specific adult must be reconstituted before the baby's habitual expression of complacency is again observed. Close attachment to specific adults consid-

erably before the end of the first year of life thus appears to be a fact. In addition, this early attachment is ordinarily characterized by a reciprocating acknowledgment of the individual wills and drives of both parent and child. Under normal circumstances, the parent soon learns that the child has an individual will of his own and a capacity for influencing his own living routine. The child is even encouraged to "have his say" as to how he wants his life ordered. The existence of a relationship and the nature of this relationship with the mother or parent are the cornerstone of developing identifications. They color the child's grasp of himself, his relation to people outside of the primary family group, his relation to the material world of things, his mode of solution of problems that may arise to meet him, his level of conceptualization, and probably even his simplest perceptions. In summary, the typical family experience of the baby may be described as follows:

1. There is warm, loving contact between specific parent person and child.
2. This contact is continuous in terms of life span and also in terms of detailed daily routine. The child is in the company of the mother for many hours during the day and for many months.
3. The contact is a source of constant stimulation. The child is fondled and handled physically a great deal. He is sung lullabies and talked to. His motor and verbal response receive immediate recognition. He is encouraged to babble, to form sounds and then words, to sit up, to stand up, to walk and climb. He is presented with many multicolored toys. He is carried through a house full of interesting objects, meets children and adults, and is often fascinated by animals about him. He is encouraged to perform various life tasks and to react to problems and frustrations in a way that is pleasing to his parents whom he loves and wants to please.
4. Yet his relationship to his parents, except in very rare situations, involves a degree of reciprocity. The child learns, and is generally encouraged to learn, that he may be active in regulating his living and in ordering his environment to meet his own needs and desires.

What happens to children who are deprived of the above described type of psychological experience in infancy? An unusual

<sup>1</sup> Awarded the Devereux Schools prize at the Centenary Meeting of The American Psychiatric Association, Philadelphia, Pa., May 10-13, 1944.

From the New York Association for Jewish Children, Foster Home Bureau, New York, N. Y.

opportunity for the experimental study of deprivation during infancy is provided by the existence of infant institutions where the conditions of baby rearing are often the obverse of those prevailing in families. The child is one of a large group of babies cared for by a baby nurse. The adult-child ratio is very low so that there is a minimum of adult stimulation. Ties with specific adults are casual and fleeting. Identifications are consequently relatively unformed. In addition, because of the requirements of group routine, the child's activities are completely regulated from without. He is not encouraged to participate in the formulation of his own day to day program.

There have been a series of investigations of the effects of such deprivation on the later development of the institutional babies. Lowrey (11) first presented a statement of psychiatric impression, based on the observation of 28 children in boarding homes, who had been reared for their first three years in an institution. He concluded that these children developed an "isolation type of personality characterized by unsocial behavior, hostile aggression, lack of patterns for giving and receiving affection, inability to understand and accept limitations, much insecurity in adapting to environment."

Following Lowrey, there was a series of controlled investigations of the problem (3, 4, 5, 6, 7). Interest was focused on a group of children who had entered the same baby institution in their early months, had remained there to about the age of 3, and had then been transferred to foster homes for care. (Such children will henceforth be called institution children.) In each of the studies, the institution children were equated with a control group in terms of age, sex, and as nearly as possible in terms of total years of dependency. The control group consisted of children whose total life experience had been with foster families in addition to a very brief period with their own families. (These children will be referred to as the foster home children.)

In an initial investigation (3), 40 institution children were contrasted with 40 foster home children. The children placed in foster homes after babyhood rearing in institutions clearly demonstrated greater frequency of

problem behavior than did the children with continuous foster home experience. The institution children were characterized by problems involving the overt expression of anxiety (restlessness, hyperactivity, inability to concentrate, etc.), the overt expression of aggression (temper display, impudence, destructiveness, cruelty, etc.) and affective impoverishment. It was concluded that the institution children were less secure, more isolated from other people, and less able to enter into meaningful relationships. They also showed more frequent speech retardation, school deficiency and mental retardation.

A subsequent study (4) demonstrated that the deviating behavior of the institution children predisposed them to frequent foster home replacement. Such unusual or deviating behavior was the most common reason for the replacement of the institution children, although almost non-existent in the foster home group.

It was possible to formulate a more elaborate statement of the psychology of the institution child following intensive experimental, observational and genetic study of a group of adolescents with institutional experience in infancy (5, 6, 7). Again, they were contrasted with a group of foster home children. Both institution and foster home groups had been in foster homes which were equivalent in such subjective factors as degree of acceptance and assimilation by the foster family and in the more objective home factors such as children's facilities, economic status, cultural status, sociality status, occupational status and educational status. In addition, the true mothers of the institution children were superior to the true mothers of the foster home children. Yet the institution children were more retarded mentally and were considerably more immature in perceptual reaction and in level of conceptual performance. They also more frequently showed problems such as restlessness, hyperactivity, inability to concentrate, lack of popularity with children, poor school achievement, fearfulness and excessive craving for affection. They were shown by experiment and case history to be deficient in drive and to be marked by an unusual degree of apathy or emptiness of emotional response. It was

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inferred that extreme deprivation in infancy produced a profoundly deviate personality type characterized by (1) marked impoverishment, meagerness and lack of differentiation in all aspects of personality, and (2) marked passivity or apathy of personality.

The above studies were cross sectional studies of groups of institution children at mean ages 6 years and 9 months (3), 8 years and 5 months (3), and finally 12 years and 2 months (5). The results tended to be mutually confirmatory. However, there was an obvious need for the study of a given group of institution children while in the institution and following transfer and a period of experience in the foster home. There was particular need for follow-up of the institution children after a relatively brief time of placement because of the frequent subjective impression of the caseworkers that the most marked changes in the children's behavior and functioning levels occurred in the initial stages after placement. The present paper is a report of such a study.

#### THE EXPERIMENTAL GROUPS

The institution group consisted of 15 children (9 boys, 6 girls) who had been admitted to the infant institution in very early infancy and at a mean age of 4½ months. They had been under institutional care for an average of 32 months and transferred to foster homes at 37 months. The first series of experimental tests were administered to them when they were still in the institution and at a point when foster homes were already being sought for them. An attempt was made to observe each child as close to the point of transfer to the foster home as possible, though as a matter of fact a discrepancy resulted from the fact that it was not possible to predict exactly when an appropriate foster home could be found for each child. The institution children were first tested at the mean age of 34 months, transferred to foster homes at the age of 37 months, and tested a second time seven months after placement at the age of 43

<sup>2</sup> In a study involving intelligence tests of preschool children, a relatively brief experimental period also minimizes the variation in test content and in the significance of I.Q.'s from age to age.

months. The interval between first and second tests was nine months.<sup>2</sup>

The institution children were paired with a group of children who had been in foster homes and who had not experienced any other but family rearing.

These children (foster home children) were equated with the institution children to within three months in the following

TABLE I  
ADMISSION AGE, TOTAL TIME UNDER CARE WHEN LAST EXAMINED (MONTHS)

	Admission age		Total time under care (at time of 2nd testing)	
	Mean	Std. dev.	Mean	Std. dev.
Institution . . . . .	4.47	4.40	39.56	7.15
Foster home . . . . .	3.67	5.27	39.09	5.62

TABLE II  
DISTRIBUTION OF TIME UNDER CARE OF INSTITUTION CHILDREN (MONTHS)

	Mean	Std. dev.
Age at admission to institution . . . . .	4.47	4.40
Age at transfer to foster home . . . . .	36.82	5.11
Time spent in institution . . . . .	32.35	5.47
Time spent in foster home (time of second testing) . . . . .	6.60	3.74
Total time under care (time of second testing) . . . . .	38.95	6.42

TABLE III  
AGES OF CHILDREN DURING FIRST AND SECOND TESTINGS (MONTHS)

	Age at 1st testing		Age at 2nd testing		Interval between testings	
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
Institution . . . . .	34.08	6.00	43.42	5.13	9.34	1.42
Foster homes . . . . .	34.62	6.36	42.75	6.00	8.14	1.35

items: age, sex, age at admission to care, age at first testing and age at second testing. The foster home children had entered foster care at a mean age of 4 months. They were first tested at a mean age of 35 months and then retested at a mean age of 43 months. The interval between first and second tests was eight months.

It was possible to investigate the maternal backgrounds of all the children. The intake record supplied accurate information on job and school history of most of the true

mothers. Occasionally, where there was question, it was possible to obtain the information directly from the true mothers through the placement workers who were in contact with them. The true fathers for the most part were unknown. Whatever judgments are made regarding the background of the children are consequently derived

equated groups of older institution and foster home children, the occupational status of the true mothers of the institution group tends to be superior to that of the true mothers of the foster home group. More of the institution group mothers are employed in skilled trades and fewer in the day labor to semi-skilled trades. While the occupational superiority of the institution children's true mothers is clear there is no reliable difference between institution and foster home groups in the educational status of the true mothers.

The occupational status of the foster fathers was also evaluated in accord with the Minnesota scale for occupational classifica-

TABLE IV

Birthplace of mother	Institution		Foster home	
	No. of children	%	No. of children	%
United States . . . .	13	87	11	73
Eastern Europe . . . .				
Germany . . . .	2	13	4	27

TABLE V

## MATERNAL STATUS

1. Occupational status . . . .	Day labor to semi-skilled trades				Skilled trades				Chi <sup>2</sup>	P		
	Institution		Foster home		Institution		Foster home					
	No. of children	%	No. of children	%	No. of children	%	No. of children	%				
9	60	15	0	6	40	0	0	0	7.50	Less than 1%		

2. Educational status . . . .	8th grade or less				Some high school or more				Chi <sup>2</sup>	P		
	Institution		Foster home		Institution		Foster home					
	No. of children	%	No. of children	%	No. of children	%	No. of children	%				
7	47	10	67	8	53	5	33	1.22	Between 20% and 30%			

TABLE VI

## REASONS FOR PLACEMENT

	Institution		Foster home	
	No. of children	%	No. of children	%
Born out of wedlock . . . .	12	80	11	73
Neglect . . . .	3	20	4	27

from data regarding the children's true mothers.

The true mothers of both groups tend to be similar in national derivation. A majority in both groups were born in the United States.

The occupational backgrounds of the mothers were classified according to the Minnesota scale for occupational classification (8). As in a previous study involving

tion. We were surprised to observe that more of the foster fathers of the institution children fell in the skilled trades to professional categories and fewer in the day labor to semi-skilled categories. After careful investigation of the foster homes we would venture the following hypothesis to explain this difference in foster homes. The more recent foster home applicants who are interested in caring for babies appear to come from higher social economic groups than those obtained three years back or more. This selective process in foster homes would seem to be related to two features: (1) the nature of the recent home-finding campaign. In the past two years a more active appeal for homes has been made through newspapers. Their readers may be superior in occupational standing than previous foster

parents obtained from other channels. (2) The greater tendency on the part of the agency to participate in adoptive procedures and the consequent growth in foster home applicants who, where feasible, desire to be considered as adoptive parents. From the point of view of the present study, the significant fact is that the institution children were placed in foster homes where it might be assumed that possibilities for stimulation were at least equal to or even superior to those in the boarding homes of the foster home group.

In view of the direction of previous findings regarding the effects of infant deprivation and our own hypotheses, it is a matter of experimental importance that any psychological differences between the foster home and institution groups and, in particu-

lar, any differences in favor of the foster home group, are probably not to be explained by factors of background or constitution. The contribution of the true fathers to the adjustment of the children cannot be evaluated, but the occupational superiority of the institution children's true mothers is clear. The greater occupational competence of the true mothers of the institution children had also been observed in the previous study. Again, the reason for the superiority in the true mothers of the institution children appears to lie in the intake process. The more competent and more assertive mothers whose orientation was in the direction of temporary placement were more prone to use the institution as a resource for care for their children. In contrast, foster home care was more likely to be used as a service where parental incompetence was conspicuous and long time care was indicated. Further confirmation of this is to be found in the fact that in the foster home group, three of the true mothers had been diagnosed as feeble-minded and two as psy-

#### EXPERIMENTAL ATMOSPHERES

All of the institution children received their initial tests in the institution. The institution was for them a more natural and familiar environment than the strange office in which the foster home children were tested. In all likelihood, it was also true that the institution children were used to going off alone with a strange adult with

TABLE VII  
OCCUPATIONAL STATUS OF FOSTER FATHERS

Day labor to semi-skilled trades				Skilled trades to profession				Chi <sup>2</sup>	P		
Institution		Foster home		Institution		Foster home					
No. of children	%	No. of children	%	No. of children	%	No. of children	%				
3	20	10	67	12	80	5	33	6.65	Less than 1%		

lar, any differences in favor of the foster home group, are probably not to be explained by factors of background or constitution. The contribution of the true fathers to the adjustment of the children cannot be evaluated, but the occupational superiority of the institution children's true mothers is clear. The greater occupational competence of the true mothers of the institution children had also been observed in the previous study. Again, the reason for the superiority in the true mothers of the institution children appears to lie in the intake process. The more competent and more assertive mothers whose orientation was in the direction of temporary placement were more prone to use the institution as a resource for care for their children. In contrast, foster home care was more likely to be used as a service where parental incompetence was conspicuous and long time care was indicated. Further confirmation of this is to be found in the fact that in the foster home group, three of the true mothers had been diagnosed as feeble-minded and two as psy-

chotic. In the institution group only one mother had been diagnosed as feeble-minded and one as psychotic. We feel justified in assuming that any observed psychological differences between institution and foster home children which tend to favor the foster home group are to be related to differences in the life atmosphere of the first three years.

#### TREATMENT OF RESULTS

Small sample theory (10) was employed in determining the variance of the data and for evaluating the reliability of differences. Averages were computed where the data was continuous in nature and where we were interested in comparing our groups with the normal population. With continuous data, the "t" ratio was employed as the basis for evaluating the significance of differences.

Where the data were best handled as non-continuous, we employed the  $\chi^2$  method for testing reliability of statistical association. In the tables presented, *P* represents the percent probability that a divergence as large or larger than the one observed could have occurred by chance. A *P* less than 5% was accepted to mean that the observed divergence between the groups was a reliable one.

#### INTELLIGENCE TEST RESULTS

Each child received the revised Stanford-Binet examination (Form L), the Cattell infant intelligence scale, and the Merrill Palmer scale of mental tests. The Cattell scale was employed because of our expectation that the revised Stanford-Binet exami-

the revised Stanford-Binet examination, the Cattell I.Q. was employed in our computations. Similarly, where it was not possible to obtain a Cattell ceiling (complete failure at a given age level), the Stanford-Binet I.Q. was employed. However, the I.Q. results for each child on 1st and 2nd tests were from the same test.

#### REVISED STANFORD-BINET (FORM L)-CATTELL RESULTS

The mean Stanford-Binet-Cattell I.Q. of the institution children, when first tested in their familiar environment, the institution, was 68.10. The mean I.Q. of the foster home group when first tested was 96.38. The mean I.Q. of the foster home group was thus 28.28 I.Q. points higher than that of

TABLE VIII

#### MENTAL TEST RESULTS (REVISED STANFORD-BINET, FORM L AND CATTELL INFANT SCALES)

	Institution		Foster home		Difference		<i>t</i>	<i>P</i>
	Mean	Std. dev.	Mean	Std. dev.	Institution, higher	Foster home, higher		
First test .....	68.10	7.29	96.38	28.79	....	28.28	3.69	Less than 1%
Second test .....	75.84	2.80	101.52	10.91	....	25.68	8.82	Less than 1%

nation would be too difficult for some of the children. Like the revised Stanford-Binet test, it is an age scale and permits the immediate computation of mental age. The author (1) proposes the test as a downward extension of the revised Stanford-Binet examination (Form L), thus permitting a continuous scale from infancy to maturity. The scale runs from 2 to 36 months. Between 22 and 30 months, it employs many items of the revised Stanford-Binet examination (Form L). Cattell found that the split half reliability of the Cattell scale at 30 months compares favorably with the split half reliability of the Stanford-Binet scale at 36 months. The correlation between the Cattell scale at 30 months and the revised Stanford-Binet examination (Form L) at 36 months is higher than between the revised Stanford-Binet examination (Form L) at 36 months and at 42 months. We consequently felt justified in giving the Cattell scale as a downward extension of the revised Stanford-Binet examination (Form L). Where it was not possible to obtain a 2 year basal on

the institution group. On retesting after seven months in a foster home, the mean I.Q. of the institution group rose to 75.84. However, the mean I.Q. of the foster home group also rose to 101.52. The difference in average I.Q. in favor of the foster home group was 25.68 I.Q. points.

The foster home group was thus reliably superior to the institution group in both first and second tests. In addition, the average performance of the institution group was far below normal in both first and second testings, while the average performance of the foster group was within normal ranges. In both groups the mean I.Q. rose on retesting and the gap between both groups was little affected. This rise may have been a reflection of: (1) practice effect, (2) increased environmental stimulation in both groups, or (3) statistical regression as a result of measurement errors. Inasmuch as there is no evidence or likelihood that for the seven months preceding the second test, the foster home children were suddenly subjected to situational changes in the foster

home, it is our impression that the rise in I.Q. in both groups is simply a reflection of practice effect or typical regression to the mean as a result of error in measurement. The change within the institution group is 7.74 I.Q. points and only 5.14 I.Q. points in the foster home group. This difference in the degree of change of 2.60 I.Q. points may be slight evidence that the change to foster homes was affecting the relative intellectual standing of the institution group. However, it is not possible to interpret such small quantitative differences. In any case, it is clear that those groups are markedly discriminated both before and after placement of the institution children in foster homes in results in the Revised Stanford-Binet (Form L)-Cattell series of tests.

of the institution group was 10.81 higher than the average Stanford-Binet-Cattell I.Q. of the same group, and that after six months of placement experience, this discrepancy between tests is reduced to 2 points. The later performance of the institution children was apparently best evaluated in the institution through a test which placed greater stress on the motor, non-language aspects of behavior. Nevertheless, the second test series revealed them to be inferior in both tests relative to the normal population.

In contrast, the foster home children showed their best performance in both first and second testings in tests that give verbal performance a good deal of weight. In fact this tendency became more conspicuous in

TABLE IX  
MENTAL TEST RESULTS (MERRILL PALMER SCALE)

	Institution		Foster home		Difference		t	P
	Mean	Std. dev.	Mean	Std. dev.	Institution, higher	Foster home, higher		
First test .....	78.91	6.30	90.51	8.99	....	11.60	4.10	Less than 1%
Second test .....	77.84	6.97	89.71	9.68	....	11.87	3.85	Less than 1%

#### MERRILL PALMER SCALE

In the first Merrill Palmer test the mean I.Q. of the institution group was 78.91 while the mean I.Q. of the foster home group was 90.51. The mean I.Q. of the foster home group was thus 11.60 higher than that of the institution group. On retesting, after the institution children had been in foster homes about seven months, the I.Q. of the institution children was 77.84 and the mean I.Q. of the foster home group was 89.71. The mean I.Q. of the foster home group was 11.87 points higher.

The average Merrill Palmer performance of the foster home group was thus consistently superior to that of the institution group. On retesting there was no significant change in either group relative to the standardization group of the test. The average performance of the foster home group was within normal ranges while the average performance of the institution group was inferior in terms of normal standards.

It is also of interest that during the first test series, the average Merrill Palmer I.Q.

the second series of tests. During the first examination, the mean Stanford-Binet-Cattell I.Q. was 5.87 higher than the Merrill Palmer I.Q. and in the second examination, it was 11.81 I.Q. points higher.

#### LANGUAGE AND VOCABULARY RESULTS

Language was evaluated with the Williams, McFarland, and Little Language Achievement Scale (15). Individual scores are obtained for speech sounds employed (no credit for babbling), intelligibility of speech, and level of language organization. The total language achievement score is the sum of these three scores. Since the age standards were so tentative, language scores rather than language ages were used in the present computations.

It is definite that when first tested, the foster home children were superior to the institution children in the three phases of language that were evaluated and in the total language rating. It is equally clear that the language superiority of the foster home children was maintained even after the in-

stitution children had been in foster families for seven months. Indeed, the mean language scores of the institution children in the second test series were all inferior to the foster home children's mean scores in the first test series.

The vocabulary of the children was measured by the picture vocabulary test of the

The institution children were inferior in vocabulary in both first and second tests. Again, it is apparent that even after six months in the normal community, the average vocabulary of the institution children was still inferior to the vocabulary performance of the foster home children during the first examination.

TABLE X  
LANGUAGE TEST RESULTS (WILLIAMS, McFARLAND, AND LITTLE LANGUAGE TEST)

	Institution		Foster home		Difference		t	P
	Mean score	Std. dev.	Mean score	Std. dev.	Institution, higher	Foster home, higher		
<i>Sounds</i>								
First test ....	2.20	2.23	4.07	1.58	....	1.87	2.63	Between 1% and 2%
Second test ...	3.40	1.56	5.40	1.19	....	2.00	3.92	Less than 1%
<i>Intelligibility</i>								
First test ....	3.03	3.15	7.78	1.16	....	4.75	5.47	Less than 1%
Second test ...	5.65	3.20	8.86	0.20	....	3.21	3.87	Less than 1%
<i>Organization</i>								
First test ....	8.54	5.52	14.27	2.26	....	5.73	3.72	Less than 1%
Second test ...	12.27	4.09	15.54	0.98	....	3.27	3.03	Less than 1%
<i>Total score</i>								
First test ....	17.75	9.91	26.12	5.48	....	8.37	2.87	Less than 1%
Second test ...	22.34	7.94	29.81	2.20	....	7.47	3.50	Less than 1%

TABLE XI  
LANGUAGE TEST RESULTS (REVISED STANFORD-BINET PICTURE VOCABULARY TEST)

	Institution		Foster home		Difference		t	P
	Mean score	Std. dev.	Mean score	Std. dev.	Institution, higher	Foster home, higher		
First test .....	1.27	2.25	8.60	5.27	....	7.33	2.59	Between 1% and 2%
Second test .....	5.87	5.27	12.87	3.93	....	7.00	4.12	Less than 1%

TABLE XII  
LANGUAGE TEST RESULTS—COMPLETE FAILURE IN PICTURE VOCABULARY TEST

	Institution		Foster home		Chi <sup>2</sup>	P
	No. of children	%	No. of children	%		
First test .....	9	60	0	0	12.85	Less than 1%
Second test .....	4	27	0	0	4.62	Between 2% and 5%

revised Stanford-Binet intelligence examination (Form L)(14). This test consists of 18 pictures of common objects which the children are asked to identify. Most of the objects are within the range of experience of the institution as well as the foster home children; for example, shoe, clock, chair, bed, scissors, table, hand, tree, cup, etc. The score is the number of objects that the child is able to identify.

The extent of language retardation in the institution group is further clarified by the comparative number of children in institution and foster home groups who failed the picture vocabulary test completely and received zero scores. In the first test a majority of the institution children (60%) could not identify even one object. Fewer of the institution children demonstrated complete failure after the experimental place-

ment experience, but there were still more complete failures in the institution group than in the foster home group. If it is recalled that some of the objects were very much within the range of the institution children's experience, then the explanation for the language delay appears to reside in the limited amount of language communication between the institution children and adults who would be in a position to supply the appropriate names. In addition, the fact that four of the institution children were still unable to name any of the picture objects even after nine months' growth and a seven months' period in a foster home, where

### SOCIAL MATURITY

The institution in which the institution children had resided had always been proud of the independence which the children displayed. We were interested in answering the following questions: (1) Are there differences in the degree to which the institution and foster home children looked after themselves? (2) What occurs after the institution children are placed in foster homes? It should be noted that the stress on independence and self help was definite in the institution but not so definite in the foster home. It is my subjective impression that

TABLE XIII  
MOTOR COORDINATION RESULTS (McCASKILL-WELLMAN TESTS)

	Institution		Foster home		Difference		t	P
	Mean score	Std. dev.	Mean score	Std. dev.	Institution, higher	Foster home, higher		
First test ....	8.27	2.98	8.67	3.28	....	0.40	0.35	Between 70% and 80%
Second test ...	11.74	3.48	12.01	4.97	....	0.27	0.15	Between 80% and 90%

TABLE XIV  
VINELAND SOCIAL MATURITY SCALE RESULTS

	Institution		Foster home		Difference		t	P
	Mean S.Q.	Std. dev.	Mean S.Q.	Std. dev.	Institution, higher	Foster home, higher		
First test ....	100.52	17.18	103.32	11.64	....	2.80	0.52	Between 60% and 70%
Second test ...	87.98	11.84	109.32	22.39	....	21.34	3.25	Less than 1%

the isolation factor no longer prevailed, is probably expressive of the passivity and related learning deficiency in the institution children.

### MOTOR COORDINATION

Motor coordination was evaluated through the McCaskill-Wellman motor coordination test (12). Only the following test items, however, were employed: ascending long steps, descending long steps, jumping from an 8" height, jumping from a 12" height, hopping and skipping. The child's score was the sum of his scores in each of the above items.

In both first and second tests, the institution and foster home children were undiscriminated in gross motor coordination as measured by the items noted above.

the foster parents received satisfaction from the growing maturation of their wards but did not put equal stress on the development of competence and self care.

The Vineland social maturity scale was employed to evaluate this aspect of development. Where the children were in foster homes, the foster mothers were the informants. During the first examination of the institution group, the nurse who was most familiar with the child was used as informant.

On first examination, there was no observable difference between institution and foster home groups. The mean social quotients of both groups tended to be within normal ranges. On second examination, after the institution children had had seven months of placement experience, the mean

social quotient of the institution children dropped and the mean social quotient of the foster home children rose. At this point there was a difference between the two groups. The foster home children were now clearly superior to the institution group in social maturity. In addition, the institution group became inferior to the normal or standardization population while the foster home group remained within the average ranges. (This change will be interpreted later on.)

#### BEHAVIOR RATINGS

The children were rated in their reactions to the examiner and to the test materials. The trait descriptions and their ratings were derived from similar scales in the California behavior inventory(2). Each of the two traits was rated on a seven point scale in which score 1 meant that a child was extremely high in the trait. Score 7 meant that the child was extremely low in the trait and a score of 4 meant that the child was average for his age in the trait. The trait descriptions and appropriate ratings follow:

- A. Reaction to examiner (friendliness).
  - Score 1. Open friendliness; quick to make clearly friendly approaches; shows a prompt willingness to become friendly.
  - Score 4. Average. Friendliness depends on mood; presence of mother (or nurse); the approaches of the adult, etc.
  - Score 7. Stands off; is either uninterested, or suspicious, antagonistic, bashful, etc.
- B. Reaction to tests (interest, curiosity).
  - Score 1. Child is keenly curious and interested. Asks many questions about things. (Questions are prompted by genuine curiosity which is not to be confused with bids for attention.) Explores; investigates; tries things out, etc.
  - Score 4. Average child. Shows moderate curiosity and interest; occasionally asks questions regarding the new materials, but does not exhibit curiosity regarding the old.
  - Score 7. Child conspicuously lacking in curiosity; fails to ask questions, investigate, explore, try things out or otherwise show interest in the strange.

In evaluating the results a rating between 1 and 4 was regarded as favorable, and a rating of 5 to 7 unfavorable. In addition, the low ratings were regarded as more positive or favorable.

In the first test, more of the foster home children demonstrated what we have designated as favorable reaction to the examiner. A similar tendency was evident in the first test in regard to reactions to the test materials though the results were not reliable. However, after the institution child had had six months of foster home experience, no differences were observed with regard to friendliness to the examiner or curiosity or interest in new materials.

A comparison of the first and second ratings of each child indicate that fewer of the foster home children showed change in rating from first to second test in either of the two qualities rated. In addition more of the institution children showed more favorable, more friendly reaction to the examiner during the second examination than they did during the first examination. We may infer that there was greater continuity or stability of behavior among the foster home children from first to second test.

#### RORSCHACH EXAMINATION

The Rorschach examination was administered to each of the children. Present results tend to confirm Klopfer and Margolies' observations of the reactions of pre-school children to the Rorschach examination and the sequence of reactions as a function of growth (9). However, several additional categories of response had to be employed in the present study.

The institution and foster home groups were compared in regard to the following categories of Rorschach response:

- A. No response at all, no verbal response, no visible interest in the pictures.
- B. Babbling response, incomprehensible.
- C. Complete rejection, usually with statement "I don't know" or verbal or gestural indication of unwillingness to respond, such as shaking of the head, or "No," or "I don't know."
- D. Perservative repetition of same response through all ten cards.
- E. Perseveration to at least four cards reacted to as a whole but individual attention to some of the cards.
- F. At least seven of the ten cards received sufficiently individual attention to produce a variety of responses.

The distribution of institution and foster home children in these categories of Ror-

schach response are presented in Table XVII. If we designate categories C, D, E, F as adaptive responses to the special problem in perceptual adjustment posed by the Rorschach examination and Categories A, B as pre-adaptive responses, then the two groups were clearly differentiated. (Table XVIII.) Both before and after placement, the institution children showed the more

include it among the adaptive responses. Its occurrence among three of the foster home children during the first test and among none of the institution children is of interest since this would appear to jibe with experience regarding the growth of negativism as a normal manifestation among children about the age of 3. However, even if we exclude from consideration this particular category

Tract	TEST BEHAVIOR										P	
	Range 1-4		Range 5-7		Chi <sup>2</sup>							
	Institution	Foster home	Institution	Foster home								
No. of children %												
1. Reaction to examiner:												
First test .....	8	53	13	87	7	47	2	13	3.97	Between 2% and 5%		
Second test .....	13	87	13	87	2	13	2	13	0.00	100%		
2. Reaction to test materials:												
First test .....	7	47	12	80	8	53	3	20	3.57	Between 5% and 10%		
Second test .....	11	73	14	93	4	27	1	7	2.16	Between 10% and 20%		

TABLE XVI  
TEST BEHAVIOR—CHANGES OF RATINGS IN SECOND EXAMINATION

Tract	Institution		Foster home		Chi <sup>2</sup>	P
	No. of children	%	No. of children	%		
1. Reaction to examiner:						
First rating more positive.....	3	20	4	27	0.19	Between 50% and 70%
Second rating more positive....	11	73	4	27	9.47	Less than 1%
No change .....	1	7	7	47	6.14	Between 1% and 2%
2. Reaction to test materials:						
First rating more positive.....	5	33	3	20	0.68	Between 30% and 50%
Second rating more positive....	9	60	6	40	1.20	Between 20% and 30%
No change .....	1	7	6	40	4.66	Between 2% and 5%

primitive, pre-adaptive type of response to the ink blot. If we eliminate from our consideration those children who babbled in response to the cards, on the assumption that the absence of language was operating, there were still clear differences between groups. Only in the institution group were there children who showed no response at all to the Rorschach cards in both first and second tests.

We would regard the refusal to respond (Category C) as an active mode of adaptation to a problem. We would consequently

of response, fewer of the institution children showed recognizable adaptation to the ink blots.

The greater language deficiency among the institution children no doubt affected the Rorschach results. We would be oversimplifying the problem, however, if we attempted to explain the divergence between the two groups in Rorschach reaction merely on the basis of language difference. The institution children were more prone not to respond at all and there was less visible response to pictures as such. The configura-

s. Its home among interest experience as about exclude category

tional impression left with the observer was that of greater paucity or emptiness of reaction in the institution group.

The children's reactions to the second Rorschach test, when there was observable language growth among the institution chil-

the number of children in each group who demonstrated the more imaginative, more interpretative Rorschach patterns E or F. Again, there were more foster home children who showed this superior type of adaptive response to the Rorschach situation.

TABLE XVII  
RORSCHACH DATA

Rorschach category	First test				Second test			
	Institution		Foster home		Institution		Foster home	
	No. of children	%						
A .....	7	47	..	..	4	27	..	..
B .....	4	27	..	..	1	7	..	..
C .....	..	..	3	20	1	7	1	7
D .....	2	13	3	20	4	27	1	7
E .....	2	13	8	53	4	27	11	73
F .....	..	..	1	7	1	7	2	13

TABLE XVIII  
RORSCHACH DATA

Response pattern	First test				Chi <sup>2</sup>	P	Second test				Chi <sup>2</sup>	P				
	Institution		Foster home				No. of children	No. of children	Institution	Foster home						
	No. of children	%	No. of children	%												
Pre-adaptive Categories																
A and B..	11	74	0	0	17.37	Less than 1%	5	33	0	0	6.00	Between 1% and 2%				
Category A..	7	47	0	0	9.13	Less than 1%	4	27	0	0	4.62	Between 2% and 5%				
Adaptive Categories																
C, D, E, F..	4	26	15	100	17.37	Less than 1%	10	67	15	100	6.00	Between 1% and 2%				
Categories D, E, F...	4	26	12	80	9.13	Less than 1%	9	60	14	93	4.62	Between 2% and 5%				

TABLE XIX

RORSCHACH DATA (SECOND TEST) OF CHILDREN WITH SCORE 3 OR MORE ON SECOND PICTURE VOCABULARY TEST

Response categories E or F.....	Institution		Foster home		Chi <sup>2</sup>	P
	No. of children	%	No. of children	%		
5	50	13	93	5.71	Between 1% and 2%	

dren, were analyzed as follows: The children in both groups who had obtained vocabulary ratings of three or more in the Picture Vocabulary test were selected for comparison. This included ten institution children and fourteen foster home children. These children were compared in regard to

The group divergence in Rorschach reaction probably reflected a complex of differences including difference in language, gross intellectual level, perceptual level, level of concept formation, social maturity and emotional maturity. It is hypothesized that even after seven months of placement, the institu-

tion children were not only inferior to foster home children in the factors of language and general intellect but also in the following:

1. Degree of contact with or relatedness to the external world.
2. The strength of will to meet and reorganize the external world of experience.
3. The richness and maturational level of personality as expressed in imaginative and conceptual competence and even in the more primitive levels of perceptual reaction.

#### SUMMARY AND IMPLICATIONS

This study stemmed from an interest in the broad problem of psychological deprivation of infants and a practical interest in the related problem of institutional deprivation as such. Fifteen institution children who had been in the institution since early infancy and who at about 3 years of age were at the point of being placed in foster homes, were studied. They were equated with a group of children with continuous foster home experience of age, sex, age when substitute care was initiated and length of dependency. The major divergence between the two groups was in maternal background. The occupational status of the true mothers of the institution children tended to be superior to the occupational status of the true mothers of the foster home children.

All of the children were given a series of tests of intellect, language, motor coordination, social maturity and personality. Test reactions were also recorded and rated. Data on the children were first gathered when the institution children were still in the institution and then again after the institution children had been in foster homes for seven months.

In the first series of tests, the institution children were inferior to the foster home children in intellectual performance in activities with requirements for both verbal and non-verbal reaction, in vocabulary and in language. The mean intelligence test results of the institution children were inferior in terms of a normal group while the mean intelligence test results of the foster home group were within the average ranges. The institution children also tended to be more removed in their overt reaction to the ex-

aminer and to the test material. The Rorschach results tended to confirm their general immaturity in all aspects of psychological development in comparison to the foster home children. There were no differences in social maturity or in motor coordination. The social maturity of both groups was average. In no area were the institution children superior to the foster home children.

After the institution children had had seven months of placement experience, the foster home children were still clearly superior in intellectual performance and in language performance. Again the average intelligence test results of the institution children were below normal while the average intelligence test results of the foster home children were within the normal ranges. The equivalence in motor coordination was maintained. The principal changes occurred in the children's overt reaction to the examiner and test materials and in the area of social competence. The institution children were no longer differentiated from the foster home children in such qualities as friendliness to strange adults, and curiosity and interest in material objects. A startling shift did occur in regard to the social maturity or social competence of the children. Relative to their age group, the institution children dropped in social maturity following the foster home experience, while the foster home children rose in social maturity. Now the two groups were clearly differentiated with the foster home children superior to the institution children. The institution children were now below average in social maturity while the foster home children's social competence was still within normal ranges. Finally, the Rorschach examination continued to confirm the relative immaturity of the institution children in general psychological organization.

These results are in line with the previous comparisons of institution and foster home children similar in experimental formulation to the present one (3, 5). The inferior intellectual performance of the institution children as compared to the foster home children had been observed in studies involving equated groups of institution and foster home children at the following age: 20 pairs of children at mean age 6 years, 9 months,

20 pairs of children at mean age 8 years and 5 months, and 15 pairs of children at mean age 12 years and 2 months. The most carefully controlled study involving direct observation and rather elaborate experimentation was the adolescent investigation. The consistent divergence in mental test results of institution and foster home children as observed in this investigation was also present in the adolescent group study. There should, of course, be continued periodic study of the babies involved in the present study. However, the present study's finding that the institution child's initial experience in placement did not diminish the gap in mental performance between institution child and foster home child, in addition to the previous finding of a similar divergence in adolescent groups with years of community experience, would tend to strengthen the hypothesis that extreme psychological deprivation in infancy produces a lag in mental growth which is maintained even under new conditions of enriched stimulation.

The language deficiency of the institution children is a specific factor retarding them. The continued presence of the language handicap six months after placement (present study), four and half years after placement (3) and eight and a half years after placement (5) gives further evidence of the imperviousness of the children's personalities to environmental stimulation—an imperviousness which is explained by the passivity and apathy of total personality in the institution child. This apathy was experimentally demonstrated in the adolescent group but probably was also reflected in the Rorschach reactions of the institution babies in this study. The institution children do develop a capacity for acceptable social response in casual relationships (present study as well as 5). This only represents a capacity for superficial relationship, however. Apathy reflects itself in the nature of the child's personal relationships, his response to obstruction or failure, to separation, to limitation, and in his will to meet experience actively so as to manipulate his environment as well as to be impelled by it. Finally, the bulk of evidence points to generalized retardation and impoverishment in

all aspects of personality—even in perceptual reaction.

It is a matter of some interpretative significance, that after six months in foster homes, the institution children become socially less competent than the foster home children in this study and less competent than the average child their age. This regression on the part of the institution children would seem in part to point to the trauma of separation from the familiar environment of the institution. However, placement experience would indicate that the social regression which accompanies the separation and replacement experience of most foster home children is ordinarily observed for a brief period following replacement. Marked regression is not likely to continue for as long as six months unless the placement experience is highly unsatisfactory for the child. In addition, the adolescent study (5) pointed to retardation in social maturity in an adolescent group of institution children. The more likely explanation for the phenomena is that the average social competence of the institutional children in the institution was determined and maintained by the external control of institutional routine. When this external control was removed by placement in foster homes and when the institution children were forced to rely on their own inner will to care for themselves, the thin shell of social maturity collapsed. The children lacked the drive to grow that is derived in most children from their early identifications. There is the additional fact that the institution children become more dependent and excessively demanding of affection as a result of early deprivation and in response to the warmth of a family setting—a warmth which they are psychologically unprepared to assimilate normally.

The question may be logically asked as to whether the impoverished and apathetic responses of the institution children while in foster homes might be related to the shock of change to the startlingly new world of the foster home. Present results would indicate that the apathy was already in existence in the institution. It reflected itself in the overt response of the institution children to

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a new adult, the psychological examiner, and to new things, the test materials. It also was manifested in the tendency to meagreness or even absence of response to the world of reality as exemplified in the Rorschach examination. It is consequently probable that the apathy observed in institution children in adolescence was in adaptive response to their total life experience, but the adaptive response finally selected by them was a repetition of their babyhood pattern of behavior in the institution.

There is cumulative evidence that an extensive period of deprivation of babies in an infant institution is profoundly detrimental to their psychological growth. There is also evidence that the pernicious effects of the early experience persist even in the face of careful placement in selected foster homes, casework supervision and, in some cases, psychiatric treatment. The extreme deprivation experience of the institution children has apparently resulted in a quasi-constitutional fixation on the most primitive levels of conceptual and emotional behavior.

These conclusions should be related to previous experimental consideration of the effects of environmental stimulation on children's growth. In the main, the studies have concentrated on the effects of schooling, socio-economic status, and foster home status on children's test I.Q. as derived from typical tests of intelligence. In their extreme concern with the intelligence test product, the experimenters have tended to avoid consideration of personality and motivational factors, and both factors in relation to the intelligent act. In part at least, this may explain the confusions that typify the nature-nurture controversy raging in the field of intelligence psychology. The experimental studies of institutional deprivation in infancy confirm conspicuous lack of development in emotional organization, social relationship and the ability to conceptualize in the institution children. In addition, the generalized passivity of personality is so dominant that the child is no longer in a position to assimilate new sources of stimulation and new relationships as these may be found in the personal and material worlds. Paucity of emotional and intellectual reactions is conse-

quently characteristically maintained. Under such circumstances, it seems unlikely that marked improvement in personality and intellect can result from the introduction of a relatively superficial experience, such as the nursery school, in which, for example, the key problem of adequate parental identifications is not met. In the Skeels, Updegraff, Wellman and Williams study of orphanage children of pre-school age (13), the major effect of the nursery school was that the intelligence test level of the children who attended the school was maintained. It is patent that we will have to discover the basis for the formation of normal identifications and normal expression of will in the institution children, or they will not be in a position to assimilate new experiences in such a way as to improve in emotional status and, similarly, in intellectual status.

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## CLINICAL AND ELECTROENCEPHALOGRAPHIC STUDIES OF CHANGES OF CEREBRAL FUNCTION ASSOCIATED WITH VARIATIONS IN THE BLOOD SUGAR<sup>1</sup>

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While the dramatic neuropsychiatric symptoms associated with induced or spontaneous hypoglycemia have long been known, electroencephalographic correlations have only recently come to be recognized. Electroencephalography now provides a method for obtaining direct information as to disturbances of cerebral function resulting from hypoglycemia. Several excellent studies (1, 6, 7, 12) have recorded the changes which occur with variations in blood sugar levels.

Aside from the convulsive and other shock symptoms which are so characteristic of marked hypoglycemia, there are lesser hypoglycemic states whose symptomatology is uncharacteristic. The latter may consist of fatigue, headache, dizziness, irritability, restlessness, and a host of minor neuropsychiatric manifestations, many of which are grouped under the psychoneuroses. Since hypoglycemic reactions develop in various individuals at different blood sugar levels (5, 14), the presence of a borderline blood sugar value neither proves nor disproves a causal relation between the neuropsychiatric symptoms and the alteration in the blood sugar level in any given case. In such cases electroencephalography may be used to demonstrate whether or not a correlation exists. This paper deals with observations on this point. Before describing them we should like to record briefly the symptoms of two fully developed cases of spontaneous hypoglycemia and the typical EEGs associated with the variations in the blood sugar levels.<sup>2</sup>

**CASE 1.**—D. K., a woman of 28, was first seen on December 1, 1942. She had been perfectly well until the morning of September 15, 1942, when on awakening she felt weak, empty, dizzy, nauseated

<sup>1</sup> Read at the Centenary Meeting of The American Psychiatric Association, Philadelphia, Pa., May 15-18, 1944.

From the Neurological Service of The Mount Sinai Hospital, New York City.

<sup>2</sup> These cases have been reported at great length in a special publication by Wechsler and Garlock (13).

and sleepy. She stared and mumbled. She recovered in two hours after eating food. A similar incident occurred about a month later, a third within another month, then four in rapid succession on November 21, 26, 28 and 30. They all occurred in the morning, all were terminated by eating, she was irrational in all and, though seemingly conscious, retained no memory of what transpired during the spells. Based upon the history she was referred to the hospital with the tentative diagnosis of hypoglycemia, possibly on the basis of adenoma of the pancreas.

Examination at the hospital immediately established the diagnosis of hypoglycemia. All other clinical and laboratory tests, including salt tolerance and liver function studies, gave normal or negative results.

Fasting blood sugar values were:

	Mgm. percent
Dec. 2.....	20
Dec. 3.....	45
Dec. 9.....	40
Dec. 14.....	50
Dec. 16.....	40
Jan. 3.....	30

*Electroencephalographic Studies (Fig. 1).*—An EEG was taken with the patient fasting on December 3 at 11:30 a. m. It showed a large amount of 6 per second activity and runs of high voltage activity with a frequency close to 4 per second. The slow waves disappeared entirely five minutes after intravenous injection of 30 cc. of a 50 percent glucose solution. So did all the symptoms of the hypoglycemia. After some delay, the diagnosis of adenoma of the islands of Langerhans was made and the patient was operated on January 6, by Dr. John H. Garlock. At operation a tumor was found near the tail of the pancreas. It was excised, and the patient made practically an uneventful recovery. Postoperative EEGs were consistently normal, even on hyperventilation.

The postoperative blood sugar values are as follows:

	Mgm. percent
Jan. 8.....	105
Jan. 12.....	80
Jan. 15.....	70
Jan. 23.....	90
Jan. 27.....	80
Feb. 1.....	70

She was discharged symptom free and has remained so to-date.

Worthy of comment is the fact that the EEG was consistently abnormal before operation even when the symptoms were minor in character, that it became temporarily normal on the administration of sugar, and that it remained normal after the removal of the adenoma. Though not relevant to the present discussion we wish to stress what we regard

was told that he had generalized convulsions. While in a state of shock his blood sugar was 20 mgm. percent. On the administration of adrenalin and intravenous glucose he regained consciousness. Fasting blood sugar values were found to be as low as 20 and 25 mgm. percent, and incipient shock always appeared when the level fell below 40.

*Electroencephalographic Studies* (Fig. 1).—On Oct. 17, an EEG, taken with the patient fasting, showed numerous bursts of 6 per second activity

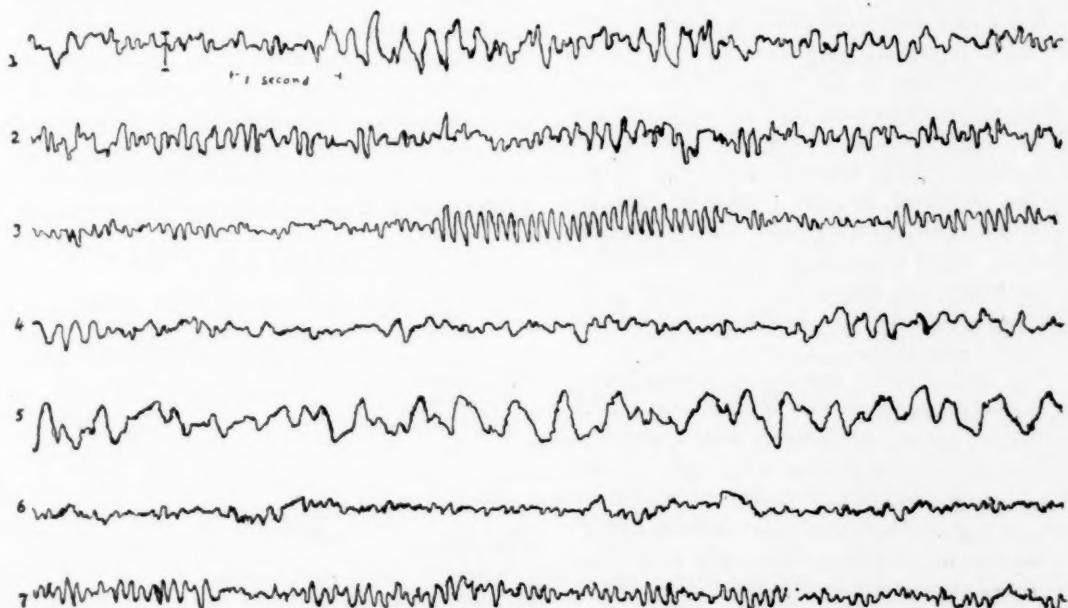


FIG. 1.—Electroencephalograms in 2 cases of spontaneous hypoglycemia. All the records are taken with fronto-occipital leads. Calibration equals 100 microvolts.

Records 1-3, Case 1. Records 4-7, Case 2.

Record 1.—Fasting: the record shows numerous potentials with frequencies of 6 per second and runs of high voltage activity with a frequency of close to 4 per second.

Record 2.—After injection of 30 cc. 50 percent glucose solution intravenously; the high voltage slow potentials have disappeared.

Record 3.—Fasting: 19 days after operation. Normal record.

Record 4.—Fasting: runs of 6 per second activity.

Record 5.—Fasting: after hyperventilation. Continuous high voltage, slow activity with frequencies between 2 and 3 per second.

Record 6.—After injection of 50 cc. 50 percent glucose solution intravenously: the slow potentials have disappeared.

Record 7.—Hyperventilation after the injection of 50 cc. 50 percent glucose solution intravenously. No slow activity appears.

as a diagnostic point in pancreatic adenoma, namely, the presence of a diabetic curve in the sugar tolerance test (13).

**CASE 2.**—L. M., white, male of 36 was admitted to the hospital on October 15, 1942. His symptoms began in June 1941. At first they consisted of weakness and a "blackout." He noticed that they occurred when he was hungry and he could prevent them by eating, particularly chocolate. It was learned that he lost consciousness on several occasions, once for as long as 20 hours, and he

with a voltage of 150 microvolts and a duration as long as 3 seconds. Hyperventilation after 20 seconds resulted in continuous 2 to 3 per second activity with a voltage of 150 microvolts. After 2 minutes the patient stopped hyperventilating and became unconscious. His record remained the same until he was given 50 cc. of 50 percent glucose solution. Immediately following the injection the delta activity disappeared completely. 15 minutes later the patient was again hyperventilated and no delta activity appeared.

Despite contradictory findings the diagnosis of

pancreatic adenoma was made and the patient was operated upon. No tumor was found. He continued to have the hypoglycemia and the EEG remained abnormal.

A third case with hypoglycemia previously described(2) was observed on the neurological service of the Mount Sinai Hospital and electroencephalographic studies were carried out. Here, too, definite correlations were found between the sugar levels and the EEG records.

It is a fact that some cases of hypoglycemia are first regarded as psychoneurotic. This is not surprising in view of the rather vague symptoms which characterize moderately low blood sugar levels. Our observations of cases with definite hypoglycemia and certain results obtained in the course of routine electroencephalography led us to inquire whether other cases with "psychoneurotic" symptomatology might not also show some correlation between the blood sugar level and nervous symptoms.

*The Influence of the Blood Sugar Level on the Effect of Hyperventilation.*—In taking EEGs on fasting subjects, it was found that some subjects who did not show spontaneous delta activity developed it during two minutes of hyperventilation. To induce hyperventilation the patients were made to breathe as deeply as possible at the rate of 30 respirations per minute. We considered as delta waves potentials with a frequency of 6 or less per second and a voltage higher than that of the alpha waves in the corresponding lead.

Blood sugar determinations were made on 111 patients who did not show spontaneous delta activity in the fasting state and in whom, if delta activity appeared on hyperventilation, it disappeared after they had been given glucose. Eighty-four, or about 76 percent of the 111 cases, did not develop delta activity; 27, or about 24 percent did. The lowest fasting blood sugar recorded was 50, the highest 150. No significant difference in blood sugar values was present between the two groups except for the fact that no values higher than 105 occurred in cases developing delta activity. This indicates that higher blood sugar values prevent the development of slow activity on hyperventilation (3, 8).

There is a group with medium blood sugar values between 60 and 105 in which other factors besides the blood sugar itself must

determine whether delta activity appears on hyperventilation or not. We know that age is one factor(8). Another factor is the clinical diagnosis. Table I shows that only very few cases beyond the age of 30 develop delta activity on hyperventilation as long as they do not suffer from epilepsy or psychoneurosis. The number of the cases with epilepsy obviously is too small to warrant any conclusions, but they are included because they happened to occur in the 111 cases studied. While only 7 percent of the cases with organic cerebral disease and only 6 percent of cases with no neuropsychiatric condition developed delta activity in this age group, delta activity appeared in 4 cases, which is

TABLE I

	6-30 years		31-65 years	
	No delta	Delta activity	No delta	Delta activity
No organic brain disease or psychiatric disorder ..	10 (59)	7 (41)	35 (94)	2 (6)
Organic brain disease .....	7 (47)	8 (53)	14 (93)	1 (7)
Psychoneurosis ...	4 (67)	2 (33)	12 (75)	4 (25)
Epilepsy .....	1 (33)	2 (67)	1 (50)	1 (50)

Age, diagnosis and appearance of delta activity after hyperventilation in 111 cases with blood sugar determinations. Numbers without brackets are absolute numbers. Numbers in brackets indicate what percent of the cases within a certain diagnostic and age group did or did not develop delta activity.

25 percent of the number diagnosed as psychoneurosis. These 4 cases showed blood sugar values of 75, 80, 80 and 95 mgm. percent.

*A Particular Group of Psychoneurotics.*—These patients were depressed without showing the specific symptoms or a history of manic-depressive disease. All had vague complaints, such as dizziness, headache, palpitation and irregular bowel movements. After a careful neuropsychiatric and general work-up they were diagnosed as psychoneurotics. The electroencephalographic studies showed, however, that these patients had a disturbance of cerebral function related to the blood sugar. The cerebral activity, as controlled by the EEG, became definitely affected by hyperventilation while the blood sugar was within normal range. It became

stable during hyperventilation after a further increase in the blood sugar level. One of the patients diagnosed as psychoneurotic stated that she felt much better after ingestion of carbohydrates.

*"Morning Nervousness."*—The interrelations between the blood sugar level, the EEG and nervous complaints in "psychoneurotics" raised the question whether similar studies of "morning nervousness" displayed by many subjects might not furnish some insight into the condition. To get some information on this point, 66 patients who had EEGs taken in the fasting state were asked the following questions relating to their condition in the early morning: (1) Would you rather sleep than get up? (2) Do you feel unrested? (3) Tired? (4) Dizzy? (5) Weak? (6) Irritable? (7) Hungry? (8) Do you dislike to talk? (9) To be talked to? (10) To work before breakfast? (11) Do you need time to get started in your work?

Excepting dizziness all complaints were present in a higher percentage of patients who developed delta activity than in those who did not. A higher percentage of the subjects between 15 and 30 years of age showed morning nervousness than between 31 and 65.<sup>3</sup> Our patients were also asked whether they felt best in the morning, at noon time or in the evening. The answers showed a rather even distribution of the cases without delta activity. Those with delta activity on hyperventilation in the fasting state show a higher percentage feeling better in the evening than at other times.

*The EEG During Blood Sugar Tolerance Tests.*—Blood sugar tolerance tests were made in a number of patients who developed delta activity in the fasting state. When the blood sugar rose, the time of hyperventilation necessary to induce delta activity ("induction time") became longer until, with high blood sugar values, no delta activity was elicited by two minutes of hyperventilation. There was, as a rule, good parallelism between the curves presenting the blood sugar and the induction time. However, rare cases were observed in which there was a dissociation between these curves, the induction time rising while the blood sugar was falling.

<sup>3</sup> The table showing the exact numbers is omitted for brevity.

#### COMMENT

Although many cases of adenoma of the pancreas have been studied since Seale Harris first described hyperinsulinism(4), we reported two new cases to correlate the abnormalities of the EEG with the hypoglycemic state. The abnormalities could be demonstrated in one of the patients at a time when he did not present evidence of an organic mental syndrome but merely a mental picture generally regarded as neurotic. There was no doubt that the mental picture in this case was caused by the fall in the level of the blood sugar. This must be stressed in view of reports (Portis(9), Rennie(10)) suggesting that in some cases the low blood sugar values are the result of emotional disturbances and not their cause. While the theoretical possibility of a lowering of the blood sugar level by emotional factors cannot be denied, the development of nervous symptoms secondary to hypoglycemia is a well established fact.

Subjective symptoms of hypoglycemia develop in different subjects at different blood sugar levels. Wiechmann(14) reported that some patients develop them at a blood sugar of 80-90 mgm. percent while others have no complaints when the blood sugar is as low as 50 mgm. percent, and according to Hart (5) even 28 mgm. percent. This proves that a blood sugar value between 50 and 90 does not in itself indicate whether certain nervous symptoms are due to a lowering of the blood sugar in the specific patient. Here the EEG becomes a valuable aid.

The relationship of the EEG to a decrease of the blood sugar has been repeatedly demonstrated(1, 2, 6, 7). If an abnormal EEG can be demonstrated in a patient with nervous symptoms and if the symptoms and the electroencephalographic abnormality disappear after a rise in the blood sugar, the conclusion is justified that we are dealing with a cerebral reaction to a blood sugar level which is too low for this patient. It remains an open question why some patients develop a cerebral reaction at higher and others at lower sugar levels. The answer to this important problem will have to be furnished by research on the carbohydrate metabolism of the brain. Delta activity appearing after hyperventilation is also influenced by the

blood sugar level, higher values inhibiting its appearance. This was shown by Rubin (12) in a case of schizophrenia, by Liberson and Strauss(8) and by Feinsinger, Brazier and Schwab(3) in a larger series. Of the 111 cases in which blood sugar determinations were made 27 showed delta activity after hyperventilation in the fasting state and no delta activity after the blood sugar had been increased. Here, too, it was not clear why some patients with blood sugar values below 110 mgm. percent developed delta activity and others did not. Knowing from our previous work(8) that the age is an important factor, and after reconfirming this by a survey of 209 new cases, it seemed necessary to review the 111 cases from this viewpoint. It was found that a large percentage of the cases which developed delta activity on hyperventilation were below 30 years of age. There was only one diagnostic group in which a relatively large number of patients of higher age developed delta activity (Table I); this was the group of psychoneurotics. Sixteen such patients, older than 30 years, were examined and 4 of them developed delta activity on hyperventilation. The blood sugar values of these patients were within the normal range. The EEG and its reactions to an increase in the blood sugar showed that the patients' cerebral activity was unstable to hyperventilation in the presence of the fasting blood sugar values and became stable with higher amounts of sugar. One patient stated that she felt much better after the ingestion of carbohydrates. No data on this point were obtained from the 3 other patients because this point did not seem significant to us when these studies were made and became important only after the analysis of our total material. These cases should, however, like those of Portis(9), react favorably to a dietary regulation of their carbohydrate metabolism. This will be studied in the future.

There is reason to believe that in those patients of the higher age group with psychoneurotic disorders and abnormal lability of the EEG to hyperventilation, the metabolic disorder was primary. Here, then, we have a group of cases showing a syndrome commonly designated as psychoneurotic in

which a metabolic disorder can be shown to be the probable cause. Cases like these might respond better to dietary than to psychotherapeutic measures, though the one does not exclude the other.

Many persons who are not sick, have a number of nervous complaints in the early morning hours when the blood sugar is relatively low. It is possible to demonstrate that relatively more subjects developing delta activity in the fasting state have such complaints than subjects without it. Also more subjects under 30 than over showed such symptoms. The percentages are much too low to justify the conclusion that the age or the development of delta activity on fasting hyperventilation are the only factors in all cases with such complaints. There is, however, one group of cases in which the age and the lability of the reaction to hyperventilation in the fasting state seem to have some etiological relation to the complaints.

There are at least two possibilities for such a relationship: (1) the symptoms may be in causal relation to the age and the delta activity may not have any causal importance for the symptoms, (2) the delta activity, although dependent on the age, may be an index of a cerebral lability important for the production of the symptoms. However, without additional material one cannot determine which one of these possibilities corresponds to the facts. Not irrelevant in this connection is the clinical observation that a psychoneurosis is sometimes initiated by reducing diets. This is worthy of further study, as is the mental state in starvation.

The parallelism between blood sugar values and changes in the EEG has been well established by Engel and Margolin(2) during blood sugar tolerance tests. We observed many additional cases showing the same parallelism. However, in rare cases there was a dissociation between the blood sugar values and the lability of the EEG to hyperventilation. Again, while the number of these cases is too small to warrant any conclusions, this type of research may well reveal instances in which a disturbance of the cerebral carbohydrate metabolism is the cause of the disease. We propose to continue the studies.

## SUMMARY

1. The reaction of the EEG to hyperventilation is discussed with relation to blood sugar levels, to age and to diagnosis. A group of psychoneurotics is described showing an unusual lability of the EEG to hyperventilation in the presence of normal blood sugar values.

2. The relationship between the presence of nervous complaints in the early morning and the development of delta activity on hyperventilation in the fasting state was studied. Delta activity develops more frequently in subjects having such complaints than in subjects without them.

3. Patients developing delta activity on hyperventilation in the fasting state feel, in a larger percentage, better at later hours than patients without delta activity.

4. Two cases of spontaneous hypoglycemia with electroencephalographic studies are reported.

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## FACTORS AFFECTING THE ELECTROENCEPHALogram OF PATIENTS WITH NEUROSYphilis<sup>1</sup>

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Since the discovery of the electroencephalogram a wide variety of diseases of the central nervous system have been investigated from this new point of view. The problem of central nervous system syphilis has thus far received scant attention except for the original observations of Berger(1) on 39 cases of dementia paralytica published in 1933 and a more comprehensive study by Finley, Rose and Solomon(2) on 175 cases of neurosyphilis published in 1942. In the latter work important concepts were established and provocative questions raised which have stimulated further activity and research. Among the conclusions reached were: (1) that 53 percent of a heterogeneous group of patients with neurosyphilis had abnormal EEGs (which was five times the incidence of abnormal EEGs in control subjects); (2) that abnormal EEGs were as common in cases of pure tabes and optic atrophy as among cases with dementia paralytica; (3) that active treatment tended to restore the EEG. to normal; (4) that slow types of abnormal EEGs were more likely to be found in confused disoriented patients while fast types of abnormal EEGs were more likely to be found in patients with mood disturbance and ideational distortions; and (5) that there was no characteristic pattern in cases of neurosyphilis, and that therefore the EEG. was of no diagnostic value in this condition.

In the present study we have expanded and intensified the investigation of neurosyphilis both from the clinical and electroencephalographic point of view. Particular attention has been paid to the correlation of signs, symptoms and laboratory findings with the EEG. Epilepsy in the setting of neurosyphilis has been carefully investigated, and the factor of age and its effect on the EEG. has been evaluated.

<sup>1</sup> From the Dept. of Psychiatry of Harvard Medical School and the Boston Psychopathic Hospital.

We are indebted to Professor Harry C. Solomon for access to the clinical material and for valuable advice and suggestions in the preparation of the manuscript.

### MATERIAL AND METHODS

Over 300 definitely established cases of neurosyphilis including dementia paralytica, meningo-vascular lues, tabes, optic atrophy and juvenile neurosyphilis have been studied electroencephalographically and clinically in this laboratory. For the present investigation the EEGs of all the patients were reviewed and 223 were found to be readily interpretable records. In the remainder interpretation was difficult because of artefact due chiefly to muscle tension and restlessness which is unavoidable in patients with advanced mental disease. The vast majority of cases were receiving active anti-luetic treatment at the time of the electroencephalographic study. This report deals exclusively with patients who were afebrile. A small group studied intensively during actual bouts of pyrexia induced either by malaria or typhoid vaccine has already been reported(3).

Our control group consisted of 240 nurses, doctors and hospital personnel between the ages of 18 and 45; the incidence of abnormal EEGs in this group was 10 per cent.

The clinical status of the patients with neurosyphilis was analyzed with particular attention to the following: (1) age, (2) clinical type of neurosyphilis, (3) mental status at the time of the EEG. recording with special reference to the presence of delusions, hallucinations and sensorial impairment, (4) important clinical findings at the time of the EEG. examination, such as tremors, pupillary abnormalities, dysarthria and reflex abnormalities. The clinical record was then reviewed for the presence of (5) a history of seizures. The type of seizure was also taken into account.

The following elements in the spinal fluid were also correlated with the EEG.: (1) cells, (2) total protein, (3) colloidal gold. In this correlation the spinal fluid data were utilized only if the lumbar puncture had been performed within one week of the recording of the EEG.

EEGs were obtained with a Grass six-channel, ink-writing electroencephalograph. Electrodes were placed over frontal, parietal and occipital regions of each hemisphere, and interconnected electrodes over the mastoids were used as an indifferent reference electrode. Two types of tracings were obtained: (a) six simultaneous recordings from frontal, parietal and occipital areas of the two hemispheres grounded to the indifferent mastoid electrodes, and (b) six simultaneous bipolar tracings. The records were taken with the patients reclining and with eyes closed. Whenever possible, the recording was carried throughout a two minute period of voluntary hyperventilation.

Electroencephalograms were classified by a method which gives particular emphasis to the frequency of the predominating rhythm, but which also takes into account other characteristics such as amplitude, regularity or irregularity of the pattern, variations from one lead to another and alteration of the pattern during overbreathing. This classification, although relatively simple in its description, is somewhat difficult to duplicate and a certain amount of experience is required before classifications are accurate and reliable. However, because it is fundamental, we believe it will soon become a meeting ground for electroencephalographers, although other methods which focus upon other characteristics of the electrical pattern will undoubtedly have their place.

The following is the classification used (Gibbs classification(4)):

(1) *Normal EEG*.—Dominant activity from 8.5-12.0 cycles per second. No significant fast or slow activity and no paroxysmal activity. Low voltage irregular records without countable frequency are considered normal.

(2) *Slightly Slow Activity (S-1)*.—Moderate amount of activity slower than 8.5 per second. No paroxysmal discharges.

(3) *Slightly Fast (F-1)*.—Moderate amount of activity faster than 12 per second.

(4) *Very Slow (S-2)*.—Great amount of activity slower than 8.5 per second.

(5) *Very Fast (F-2)*.—Great amount of activity faster than 12 per second.

(6) *Grossly Slow (S-3)*.—Great amount

of slow activity in the 2-5 per second frequency range.

(7) *Paroxysmal Activity*.—Clearly evident discharges or bursts of abnormal high voltage activity of either slow or fast frequency or both.

This classification of EEG gives greater resolving power than has heretofore been applied in neurosyphilis, and also takes into account the paroxysmal dysrhythmias which are characteristic of the epileptic disorders.

## RESULTS

In 1943 we reported an incidence of 45 percent definitely abnormal EEGs in a group of 228 heterogeneous cases of neurosyphilis (5). In that study the records were classified grossly into three groups: normal, borderline and abnormal—using classifications corresponding roughly to those of Finley, Rose, and Solomon who obtained an incidence of 53 percent abnormality in 175 heterogeneous cases of neurosyphilis. The difference between the two results is partly due to minor individual differences in interpretation of EEGs but primarily to the fact that the larger series included more patients with milder grades of C.N.S. infections.

In the present series of 233 selected cases of neurosyphilis, 50 percent of the EEGs were abnormal. Table I shows the distribution of normal and abnormal tracings among the several clinical varieties of neurosyphilis; abnormal cases are further subdivided into slow-1, 2, 3, (depending on the amount of slow activity), fast 1, 2, (depending on the amount of fast activity), and paroxysmal. The cases with a history of seizures are given special consideration for purposes of contrast with cases having no history seizures. The factor of seizures will be discussed later.

Of the cases with abnormal records, 46 percent had abnormal slow records most of which were in the slow-1 category; 44 percent had abnormal fast records most of which were in the fast-1 category. Ten percent had paroxysmal records. There was an almost equal number of abnormal slow and abnormal fast records, and the vast majority of abnormal records were in the mildly abnormal categories (S-1 and F-1).

Preliminary observations established the fact that both normal and abnormal EEGs

occurred in all types of neurosyphilis, and that the EEGs of patients with neurosyphilis were not specific for that disease but could be matched by EEGs in a wide variety of disorders. As a rule, normal EEGs occurred in patients with milder grades of infection whereas abnormal EEGs occurred in severe types or in patients with epileptic disorder

TABLE I  
DISTRIBUTION OF NORMAL AND ABNORMAL EEGs  
IN NEUROSYPHILIS

Abnormal EEGs are divided into Slow-1, 2, 3, depending on the amount of slow activity; Fast-1, 2, depending on the amount of fast activity, and paroxysmal. See text for definition of various types of EEGs.

Cases with seizures are contrasted with cases without seizures for the groups diagnosed general paresis and meningo-vascular lues. No seizure cases occurred in cases of syphilitic optic atrophy or of tabes dorsalis.

CLINICAL GROUP	NORMAL EEG'S NO. %	ABNORMAL EEG'S						TOTAL NUMBER				
		SLOW			FAST		TOT %					
		1	2	3	TOT %	1	2					
GENERAL PARESIS WITHOUT SEIZURES	65 (56%)	11	11	1	23 (20)	26	0	26 (22)	2	(2)	51 (44)	116
GENERAL PARESIS WITH SEIZURES	3 (9%)	6	3	5	14 (40)	8	2	10 (29)	0	(23)	32 (50)	35
MENINGO-VASCULAR LUES WITHOUT SEIZURES	9 (56%)	3	2	0	5 (53)	2	0	2 (13)	0	(7)	7 (44)	16
MENINGO-VASCULAR LUES WITH SEIZURES	1 (11%)	2	1	1	4 (40)	0	2	2 (22)	2	(22)	8 (89)	9
SPHYLITIC OPTIC ATROPHY ALL WITHOUT SEIZURES	14 (56%)	3	2	0	5 (20)	6	0	6 (24)	0	(14)	11 (44)	25
TABES DORSALIS ALL WITHOUT SEIZURES	19 (86%)	1	0	0	1 (5)	2	0	2 (9)	0	(3)	3 (14)	22
TOTAL ALL CASES	111 (50%)	28	20	7	52 (23)	44	4	48 (22)	12	(5)	112 (50)	223

or marked debilitation. However, individual instances of disparity between abnormality of EEG and severity of clinical symptoms were so common that only broad trends could be outlined with any surety.

#### I. RELATION BETWEEN EEG. AND TYPE OF C.N.S. LUES

The incidence of abnormal EEGs in the various clinical types of neurosyphilis is shown in Fig. 1. Only 14 percent of 22 cases of pure tabes had abnormal EEGs. However, the incidence of abnormal EEGs in optic atrophy cases was 44 percent, in cases of general paresis 55 percent, and in cases of meningo-vascular lues 60 percent. These last three percentages are significant and 4-6 times greater than what is encountered in control subjects.

Analysis revealed that one of the chief factors contributing to the abnormality of the EEG was the presence of seizures. In two of the clinical groups, namely general paresis and meningo-vascular lues a significant number of cases had a positive history of seizures, *i.e.*, 23 percent of those with general paresis and 32 percent of those with meningo-vascular neurosyphilis. The incidence of abnormal EEGs in cases of general paresis with seizures was 91 percent as compared to 44 percent in those without seizures (Table I). The same was true for meningo-vascular lues, *i.e.*, the incidence of abnormal EEGs in those with seizures was 89 percent, as compared to 44 percent in those without seizures (Table I). The presence of seizures roughly doubled the incidence of electroencephalographic abnormality in cases of neurosyphilis.

It would seem that the higher up the dis-

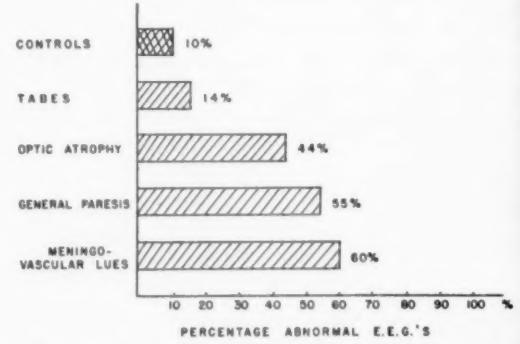


FIG. 1.—Percentage of abnormal EEGs in various clinical types of neurosyphilis as compared to control subjects.

ease in the nervous system the greater the likelihood of having seizures or an abnormal EEG. For example, no seizure histories and no significant increase in abnormality over and above that in controls appeared in cases of tabes. On the other hand, the greatest percentage of seizure histories and the highest incidence of abnormal EEGs occurred in cases of meningo-vascular lues and general paresis.

(a) *Tabes Dorsalis*.—Because of the previous report of a high incidence of abnormal EEGs in cases of tabes (2) we were surprised to find only 3 abnormal records among 22 cases of this disease. All our cases were selected because we wished to

the chief deal with as pure a group of tabes as possible. It was interesting to note that all three abnormal EEG records were obtained in patients over 50 years of age (an age group in which EEG abnormalities are not rare in control series), which strengthens the belief that tabes does not alter the EEG significantly. Because the lesions of tabes reside primarily in the cord and midbrain and not in the cerebrum, a low rather than a high incidence of abnormality would be expected.

(b) *Meningo-Vascular Neurosyphilis*.—Although the series of cases was relatively small, analysis revealed that not only was the presence of seizures associated with a high incidence of EEG abnormality but also that cases with recent vascular accidents showed more EEG abnormality than did those with old vascular accidents (existing 6 months or more prior to the EEG recording). In several of the cases with apparently healed vascular lesions prominent residual neurological signs such as hemiparesis were present and yet the EEGs were essentially normal. If, however, seizures eventually developed as a result of the brain damage the EEG was almost invariably abnormal.

(c) *Optic Nerve Atrophy*.—This group was mixed insofar as some of the cases showed signs of tabes and some showed signs of dementia paralytica, making it difficult to evaluate the effects of optic nerve atrophy alone upon the EEG. However, we were inclined to regard the 44 percent incidence of abnormal EEGs in this group as significant because of two considerations: (1) the presence of tabes alone did not raise the incidence of abnormal EEGs, and (2) cases of optic nerve atrophy alone showed as much EEG abnormality as those with both optic nerve atrophy and general paresis together.

No correlation within this group between abnormality of the spinal fluid and EEG abnormality was found. However, untreated cases with rapidly progressive optic nerve atrophy and with duration of disease less than one year had considerably more EEG abnormality than did those who had received active treatment and whose condition was relatively stationary for a long time prior to the EEG recordings.

## II. RELATION BETWEEN THE EEG. AND CERTAIN CLINICAL MANIFESTATIONS OF C.N.S. SYPHILIS

Fig. 2 shows the incidence of abnormal EEGs in cases of general paresis analyzed with reference to a history of seizures, and certain signs and symptoms of general pare-

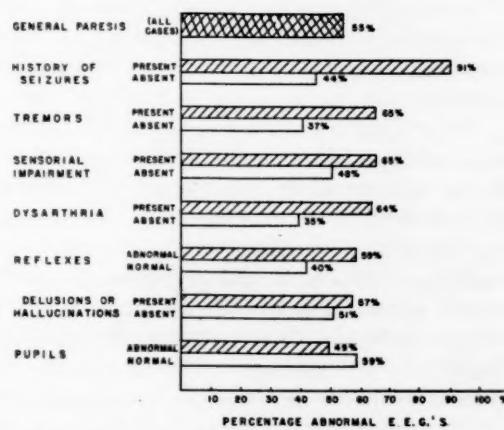


FIG. 2.—Percentage of abnormal EEGs in cases with general paresis analyzed with reference to the effect of a history of seizures and various signs and symptoms on the incidence of EEG abnormality.

TABLE II  
PERCENTAGE ABNORMAL EEGS IN RELATION TO NUMBER OF CELLS, AMOUNT OF TOTAL PROTEIN AND SEVERITY OF COLLOIDAL GOLD REACTION IN THE CEREBRO-SPINAL FLUID

We arbitrarily divided the "gold sol" reaction on the basis of the number of 5's appearing in the curve.

SPINAL FLUID	% ABNORMAL E.E.G.S.
CELLS	
0-5 w.b.c./mm <sup>3</sup>	42%
5-10	53%
10-30	53%
over 30	67%
TOTAL PROTEIN	
Less than 50 mg% 50-100 mg% Over 100 mg%	42% 42% 58%
GOLD SOL	
No Five's Less than 4 Five's Four or More Five's	42% 42% 58%

sis. Table II summarizes the incidence of abnormal EEGs in cases of general paresis analyzed with reference to cells, total protein and colloidal gold reaction in the cerebro-spinal fluid. These findings will be discussed briefly under four headings (a) seizures, (b) mental status, (c) physical signs, (d) cerebro-spinal fluid findings.

(a) *Seizures*.—A review of the clinical records of 223 patients revealed a history of seizures in 44 cases or 19.7 percent. As has already been stated, the highest percentage of seizure histories (32 percent) was found in cases diagnosed meningo-vascular lues, the next highest (23 percent) and including the bulk of seizure cases (35 cases) was found in general paresis. Cases of optic nerve atrophy and of tabes dorsalis were noteworthy because of the absence of seizure histories.

According to available figures the incidence of abnormal EEGs in the general population is 10-15 percent, of paroxysmal EEGs about 0.9 percent, of clinical epilepsy around 0.5-0.7 percent. In our series of relatively early patients with neurosyphilis, the incidence of abnormal EEGs was 50 percent, of paroxysmal EEGs 5 percent, of epileptic seizures 19.7 percent. The tendency for neurosyphilis to produce abnormal cerebral function shows up strikingly in contrast to the figures for the population at large.

Many clinical types of seizures were encountered. There was a predominance of grand mal and a relatively large percentage of odd or atypical attacks especially in cases diagnosed dementia paralytica. In meningo-vascular lues there was a relatively high incidence of Jacksonian seizures which is consistent with the more focal type brain damage in this disorder. Petit mal epilepsy was notable by its absence. Table III shows the distribution of various types of seizure disorders in dementia paralytica and in meningo-vascular syphilis.

The high incidence of EEG abnormality in seizure cases has already been alluded to in connection with the discussion of the clinical types of neurosyphilis. Fig. 2 shows graphically that the presence of seizures in general paresis raises the incidence of EEG abnormality in the group to 91 percent while in its absence the percentage of abnormal EEGs is only 44 percent. Of all the factors considered a history of seizures correlates best with an abnormal EEG, and the correlation is as great or even greater than in idiopathic epilepsy without C.N.S. syphilis.

As to the relationship between the type of EEG pattern and the incidence of seizure histories, Fig. 3 shows clearly that the more

abnormal the EEG, the more it is likely that the patient is suffering from some type of seizure disorder. Moreover, the paroxysmal type of EEG is quite specific for seizure disorders in neurosyphilis, while the very fast and grossly slow types, according

TABLE III  
TYPES OF SEIZURES OCCURRING IN GENERAL PARESIS  
AND MENINGO-VASCULAR LUES AND NUMBER  
OF CASES IN EACH TYPE

A total of 44 cases or 19.7 percent of 223 heterogeneous cases of neurosyphilis had a history of seizures.

DIAGNOSIS	GRAND MAL	PSEUDOMOTOR	JACKSONIAN OR VOCAL	ATYPICAL	TOTAL
GENERAL PARESIS	25	2	2	9	36
MENINGO-VASCULAR LUES	4	0	6	1	9
TOTAL	29	2	8	10	44

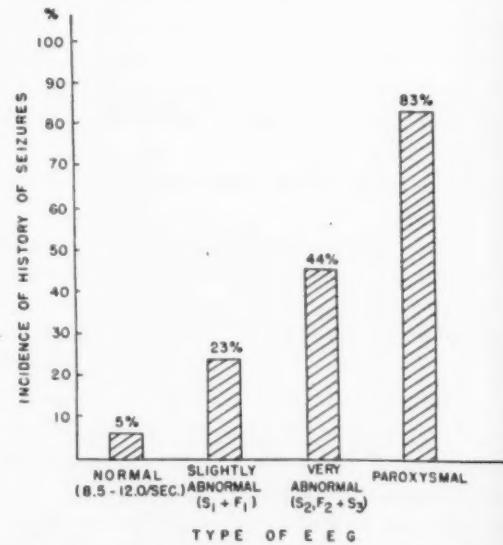


FIG. 3.—Percentage of cases with a history of seizures in various electroencephalographic categories. Based on 223 cases of neurosyphilis.

to our figures, are definitely suggestive of an underlying tendency to epilepsy.

The findings are the same in kind as those reported in idiopathic epilepsy; the extent to which they apply in neurosyphilis is at least as great and possibly greater than in idiopathic epilepsy. Finley, Rose, and Solomon(2) stated that the EEG had no diag-

nostic value in neurosyphilis. The present data, however, indicate that the EEG is of great value in the diagnosis of neurosyphilis, particularly in the early stages of the disease. The EEG is also of value in the differentiation of neurosyphilis from other diseases, such as dementia paralytica, tabes dorsalis, and optic nerve atrophy. The EEG is also of value in the follow-up of patients with neurosyphilis, as it can detect changes in the brain function that may occur before clinical symptoms appear.

nostic value in neurosyphilis. They implied that it was impossible to differentiate the clinical varieties of neurosyphilis by EEG. data alone. In this we would agree; however, it seems to us that at least two diagnostic uses for the EEG. emerge from a study of the data thus far: (1) that an abnormal EEG. is presumptive evidence of brain disease and includes the possibility of C.N.S. syphilis; (2) that a very abnormal EEG. and particularly a paroxysmal type is strong evidence for a seizure disorder in cases with neurosyphilis as well as cases without neurosyphilis. A very abnormal EEG. should, therefore, put the clinician on the alert for the possibility of seizures.

(b) *Mental Status*.—It is well recognized that the varieties of mental disturbance resulting from neurosyphilis are almost endless. The mental picture depends on many factors including the amount and location of the damaged brain tissue, the intensity of the disease process, the vulnerability of the nervous system and the fundamental personality structure of the individual. In mild cases the disease may manifest itself in primarily affective or schizophrenic reaction patterns; if allowed to progress, ultimately the sensorial functions are modified and "organic reaction" features dominate the clinical picture.

In an analysis of a series of 100 patients with general paresis, it was found that in those with confusion and memory impairment 65 percent had abnormal EEGs, while in those without confusion and memory impairment only 48 percent had abnormal EEGs. Slow brain wave patterns were the most frequent types of abnormality in patients with sensorial impairment, although other varieties of tracings were also found. In the very advanced cases of neurosyphilis with marked dilapidation of mental functions, an abnormal EEG. was the rule.

Of those patients with delusions or hallucinations 57 percent had abnormal EEGs; of those without delusions and hallucinations 51 percent had abnormal EEGs. We cannot regard this difference as significant.

(c) *Physical Signs*.—Table II summarizes also the relation between tremors, dysarthria, abnormal reflexes, abnormal pupils and the EEG. in a series of 100 cases of general paresis. A significantly higher incidence of

abnormal EEGs was obtained in the cases with tremors, dysarthria or reflex abnormalities than in those without; however, the incidence of EEG. abnormality was not significantly different in those with pupillary abnormalities as compared to those without.

To summarize the above, we would say that so far as physical manifestations of general paresis are concerned, the best correlations with EEG. abnormality were obtained with those signs which are usually associated with cortical disturbance, *i.e.*, seizures, tremors, dysarthria,—while the poorest correlation was obtained with those signs ordinarily associated with deep pathology, *i.e.*, pupillary abnormalities. So far as mental function is concerned, the best correlation with EEG. abnormality was found in the syndrome ordinarily associated with brain damage (confusion disorientation) and the poorest correlation in the syndromes associated with "functional" disorder and so often characterized by delusions and hallucinations.

(d) *Spinal Fluid Findings*.—Table II summarizes the relationship between important findings in the spinal fluid and the incidence of EEG. abnormality in a series of 100 patients with general paresis. Although there were numerous individual exceptions a definite trend of increasing incidence of abnormal EEGs was associated with increase in either cells, total protein or severity of colloidal gold reaction.

If, arbitrarily, the cases were divided into mild, moderate or severe on the basis of an overall evaluation of the clinical and laboratory findings, a definitely positive correlation appeared between clinical severity and incidence of EEG. abnormality—from 32 percent abnormal EEGs in mild cases to 61 percent abnormal EEGs in the severe cases.

### III. ELECTROENCEPHALOGRAPHIC FINDINGS IN RELATION TO AGE IN PATIENTS WITH NEUROSYPHILIS

Our experience with a large series of patients suffering from various neuropsychiatric ailments(6) as well as with normal subjects has convinced us that age is a consideration of major importance in evaluating the EEG. As yet no such consideration

has been applied to the EEGs of patients with neurosyphilis.

Table IV summarizes the important data relating to age. The largest number of cases (48 percent) was in the 40-50 year age group. Only 2 percent were under 20 years of age, and only 3 percent were over 60 years of age. The percentage of abnormal EEGs was least (38 percent) in the group between 40-50 years and greatest (80 percent) in the youngest age group, *i.e.*, under 30 years. The slow type of abnormality gradually declined with advancing age whereas the fast abnormality gradually in-

TABLE IV  
THE AGE DISTRIBUTION OF CASES OF  
NEUROSYPHILIS

The factor of age is considered in relation to percentage of abnormal EEGs, percentage of fast and slow type of EEG., and percentage of cases with seizures.

	AGE GROUP			
	UNDER 30	30-40	40-50	60+
NUMBER OF CASES AND %	18 (7%)	42 (18%)	107 (48%)	80 (37%)
% ABNORMAL E.E.G.s	90%	59%	38%	60%
% ABNORMAL SLOW E.E.G.s (BASED ON TOTAL ABNORMAL)	75%	97%	98%	94%
% ABNORMAL FAST E.E.G.s (BASED ON TOTAL ABNORMAL)	25%	33%	44%	56%
% CASES WITH SEIZURES	47%	22%	13%	22%

creased with advancing age. The percentage of cases with seizures ran parallel to the incidence of total abnormal EEGs with age.

The downward trend of slow activity and the upward trend of fast activity is essentially similar to that noted in neuropsychiatric patients and in control subjects.

The low incidence of abnormal EEGs in the 40-50 age range is a significant finding. It is partly but not entirely explained by the low incidence of seizure cases in this age group. Special attention to the types of tracings in relation to age revealed that the abnormal tracings in the 40-50 age range were of a milder grade of abnormality than in the other age groups.

In speculating as to the cause of the low incidence of abnormal EEGs in this age group we are faced with the fact that in con-

trols(7) and in neuropsychiatric subjects(6) there is a relatively high incidence of EEG abnormality in the same age range. Two possibilities are worth considering (a) that the less active and better treated cases occur in this age group and (b) that the electrical brain pattern at this age is less vulnerable to the disease than at any other age. Further investigation is necessary before either or both of these possibilities can be verified.

#### DISCUSSION

Our excursion into neurosyphilis has netted many interesting correlations which challenge synthesis into some meaningful whole. To begin with, it is not surprising that disease of the central nervous system produces abnormalities in a large percentage of cases or that the more severe the involvement clinically the more abnormal the EEG. Evidently lesions in the cortex or high up in the nervous system are likely to be associated with seizures, tremors, dysarthria, reflex abnormalities and an abnormal EEG. The demonstration that a very high incidence of EEG. abnormality is associated with seizures and that the paroxysmal dysrhythmia is characteristic for seizure disorders has already been amply elaborated in the study of the brain waves in conditions other than central nervous system syphilis. Our results would indicate that syphilis of the nervous system not only tends to produce seizures but keeps the abnormal electrical activity characteristic of epilepsy at a maximum.

That general paresis with pathology primarily involving the cerebrum should manifest greater disturbances in electrical activity than tabes with pathology limited to the midbrain and cord seems quite intelligible. The presence of pupillary abnormalities, which essentially owe their existence to disease in the periaqueductal area, does not raise the incidence of EEG. abnormality; this also is explicable on the basis that deep pathology of neurosyphilis does not as a rule register on the cortex.

In so far as the mental picture is concerned the appearance of a disorientation—confusion syndrome is more likely to be associated with EEG. abnormality than is a syndrome primarily of delusions and hallucinations.

The healing of brain lesions produced by syphilitic vascular accidents brings with it an improvement in the electrical pattern of the brain even though residual neurological findings persist; however, if convulsive disorder supervenes the EEG. again shows abnormalities characteristic of all epileptic disorders save for a few special varieties(8).

The correlation between the EEG. and the spinal fluid reaction is definite but by no means as marked as was expected prior to the investigation. Changes in the spinal fluid in regard to cells and protein are ordinarily regarded as precise indicators of "activity" of the disease process, and the EEG. likewise is looked upon as correlating well with active disease. However, changes in the spinal fluid depend primarily on the reaction of the meninges to infection rather than of the brain parenchyma; the latter rather than the former would be expected to correlate best with abnormal electrical disturbance. It is probable that pure meningeal irritation will not affect the EEG. at all. The lack of a better correlation may be explained on this basis; on the other hand the slight positive correlation which was obtained may be explained by the frequent association between meningeal involvement and parenchymatous disease.

Why optic nerve atrophy cases should have a high incidence of abnormal EEGs is a mystery to us as it was to Finley *et al.* One case (without neurosyphilis) which we studied before and after enucleation of an eye showed no essential change in the EEG. pattern. This interesting phase of the work merits much further thought and investigation.

#### SUMMARY

Fifty percent of 233 cases of neurosyphilis had abnormal EEGs. The incidence of abnormality in the various clinical types of neurosyphilis was as follows: meningo-vascular lues 60 percent; general paresis 55 percent; optic nerve atrophy 44 percent; tabes 14 percent. In a control group the incidence of abnormality was 10 percent. Tabes, therefore, did not have a significantly greater incidence of abnormal EEGs than controls; on the other hand, the incidence

of abnormality in optic atrophy, general paresis and meningo-vascular lues was significantly greater than in control subjects.

Twenty percent of the total cases with neurosyphilis had positive histories of seizures as compared to an incidence less than one percent in the general population. The meningo-vascular type of neurosyphilis had the highest incidence of seizure histories and a large proportion were of the Jacksonian variety. The next highest incidence of seizures occurred in cases of general paresis and they were mostly of the grand mal and "atypical" variety. No cases with a history of seizures occurred in the groups diagnosed tabes dorsalis or optic nerve atrophy.

A very high incidence of abnormal EEGs (90 percent) occurred in the cases with a history of seizures. The more abnormal the EEG. in any given case of neurosyphilis, the greater the likelihood that the patient had a history of seizures. The paroxysmal type of EEG. abnormality was the most specific for the seizure disorders.

In a group of cases of general paresis a number of clinical and laboratory findings were correlated with the incidence of EEG. abnormality with the following results: The incidence of EEG. abnormality was highest in patients with a history of seizures. The presence of tremors, dysarthria, abnormal reflexes or an "organic" mental picture also raised the incidence of EEG. abnormality, but not as high as did the presence of a history of seizures. A slightly positive correlation was obtained between numbers of white blood cells, amount of total protein, severity of colloidal gold reaction in the cerebro-spinal fluid and incidence of EEG. abnormality. No correlation was obtained between EEG. abnormality and abnormal pupils, or between EEG. abnormality and presence of delusions or hallucinations as a primary part of the mental picture.

A study of all cases in relation to age revealed that the largest number of cases of neurosyphilis were in the 40-50 year age group. The incidence of epilepsy and of abnormal EEGs was lowest in this age group. There was a rise in the incidence of fast activity with age and a fall in the incidence of slow activity with age. This trend in cases of neurosyphilis parallels the trend

previously observed in control subjects and in neuropsychiatric patients.

We are indebted to Marie M. Healey and Gertrude A. Jones, R. N., for able technical assistance.

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# THE ELECTROENCEPHALOGRAPHIC AND CLINICAL EFFECTS OF ELECTRICALLY INDUCED CONVULSIONS IN THE TREATMENT OF MENTAL DISORDERS<sup>1</sup>

B. K. BAGCHI, PH.D., R. W. HOWELL, M.D., AND H. T. SCHMALE, M.D.<sup>2</sup>

In the evaluation of the cortical effects of electric shock we may assume a general principle that no clinical effect is the result of one particular factor, but the result of an interaction between many factors; in other words, it is the effect of a multi-dimensional system and unless the relationships between the variable factors of that system are investigated, the reasons explaining the permanence, transitoriness or absence of that effect would not be adequately known. One of the important variables of that system is the cortical electrodynamics which is partially represented through the electroencephalogram. Although in all the published studies concerning shock therapy some of the variables of that system have been taken into consideration, the *intimate relationships* between the variables, independent and dependent, still need to be worked out. The purpose of this paper is to investigate in detail relationships between some of the variables.

## PROCEDURE AND TREATMENT OF DATA

Fifty-four patients admitted to The Neuropsychiatric Institute for observation and treatment were used for this study; 27 of them were male and 27 female. Duration of their illness was from four months to six years. The Rahm electro shock machine was used for administering the electric shock.<sup>3</sup> Grand mal shocks were administered two to three times a week. The largest number of grand mal shocks to be given one patient in our series has been arbitrarily set at 15. A period of two to four weeks' observation and general psychotherapy was allowed for each patient before a decision was made that shock therapy should be adopted. The treat-

ment was stopped with the appearance of what was judged as maximum possible improvement or continued resistance to improvement.

The preshock and postshock EEGs were taken on the Grass three-channel electroencephalograph in monopolar and bipolar fashion for forty-five minutes using frontal, motor, occipital and temporal leads and two ear lobe leads. The records were analyzed qualitatively and quantitatively, the latter specially in regard to thirty feet of representative samples. The temporal leads were one to two centimeters posterior to the edge of the shock electrodes which were superior to both zygomatic arches.

Preshock EEGs are classified into normal, borderline and abnormal. Lack of space forbids a description of this classification.<sup>4</sup> Its basis, however, is afforded by an analysis of over 3000 EEGs, clinical or otherwise. The abnormal EEGs are divided into mildly epileptoid pattern, epileptoid pattern and indeterminate pattern. Of 54 electrically shocked patients 10 did not have any preshock EEG.

Postshock EEGs were taken at various intervals. Some postshock EEGs were taken 14, 30, or 60 days following the last treatment. More than half of the cases had their postshock EEGs within a week. In order to determine the combined effect of the two sub-variables—number of shocks and the interval between the last shock and the first postshock EEG—an assumption has been made; namely, the larger the number of shocks or the lesser the interval of time between the last shock treatment and the first postshock EEG, the greater the electroencephalographic changes and vice-versa. The two sub-variables have been combined in the following manner: the reciprocal of the interval in days is multiplied by 100 to give a large number. This is multiplied by the

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<sup>3</sup> For details of the machine and procedure during treatments see authors' reprints.

<sup>4</sup> The description though not published here will be included in the authors' reprints.

number of shocks. For example, if a patient had 6 shock treatments and the interval in days between the last shock and the post-shock electroencephalogram was 2, we first find the reciprocal of 2 by dividing 2 into 1, obtaining .5, and then multiply .5 by 100 to get 50. Finally we multiply 50 by the number of shocks which is 6, giving a score of 300. Theoretically, the treatment of these two sub-variables should correlate with the degree of the electro-encephalographic changes after an adequate number of shocks (shock threshold) has been administered and not before. (See footnote on page 53.)

Postshock electroencephalographic changes are divided into four categories—(1) no change, (2) mild change, (3) moderate change, and (4) marked change.<sup>5</sup> Patients used in this series have been classified into five psychiatric "diagnostic" groups (tables 2, 3 and 4). Patients' status at discharge has been classified as: made worse (scored as -1), no change (scored as 0); improved (+1); and recovered (+2).<sup>6</sup>

The index of efficiency of shock treatment is calculated by finding the ratio between total weight (sum of number of cases under each discharge status times discharge score or weight) and total number of cases (table 3). The percentage of efficiency of treatment is figured by obtaining the ratio between perfect efficiency, which is recovery and which is assumed here as having a weight of 2, and the obtained index of efficiency. Any other assigned weights to the categories should not make a difference in the calculations, provided the relative distance between no change and recovery is taken into consideration in terms of steps rather than in terms of the assigned weight. For statistical comparison between sub-groups, the chi square method has been used, also Fisher's *t*.<sup>7</sup>

## RESULTS

### I. Postshock Electroencephalographic Changes.—Table 1 shows different types of

<sup>5</sup> Details will be incorporated in authors' reprints.

<sup>6</sup> For criteria as to results of treatment please see authors' reprints.

<sup>7</sup> We are indebted to Dr. Paul S. Dwyer, associate professor of mathematics, University of Michigan, and to Dr. Peyton Jacob of the Neuro-psychiatric Institute for statistical assistance.

electroencephalographic changes following shock. All these types are found in different degrees—marked, moderate and mild. It appears that all types of electroencephalographic changes do not occur in all the patients. This is true even if the shock/interval factor is kept within certain constant limits (see next section). General voltage increase, increase of single slow or delta waves and the incidence of spiky waves and high voltage positive discharges are found in the largest number of cases (63% to 84%) following shock treatment though the same cases are not necessarily likely to show each of these types of changes. High voltage slow bursts (Fig. 1) and long slow runs are present in 33% and 45% of cases respectively. It is remarkable that extreme general slowing of alpha wave frequencies by 2 to 4 per second occur only in 18.1% of cases and that those (9.1%) who have had high frequency waves to start with do not lose that feature under shock nor do they undergo general slowing (fig. 2). These individuals are found instead (not shown on the table) to show particularly high voltage bursts of slow waves (3 to 3½ per second) with their regular high frequency waves superimposed upon them. This differential response of the brain to shock is a feature that bears investigation.

That shocked areas (temporal areas) will show special high voltage slow bursts may not be surprising, but what is surprising is that a large number of cases do not show that effect at all. Some but not all of these cases, however, received only a few shocks or a long interval had followed the last shock treatment before the EEG was taken. This might account for the disappearance of localized shock effect (see next section). Boshes *et al.*(4) first drew attention to this phenomenon of bursts in shocked areas as against its lack in unshocked homologous areas, but the disappearance of this localized phenomenon into the generalized slowing in all parts of the brain after a few initial shocks, as they have found, is not borne out by our studies. Localized bursts followed a few shocks or many shocks or were present long after a large number of shocks were administered. Sometimes these localized bursts cannot be distinguished from generalized slow bursts.

Nor did we find, unlike the report by the previous authors on 5 cases, any noticeable bilateral asymmetry between the so-called dominant and non-dominant hemispheres by way of the presence of lesser voltage in the dominant hemisphere (left) in 75% of our 44 cases before the administration of shock. Of the remaining 25% of cases, 55% (6 cases) had a right-sided voltage predominance. After shock no such asymmetry was noticed.

graphic similarity between an epileptic and a shocked brain. It is unprofitable to speculate now in absence of further evidence whether or not the fundamental neurophysiological process underlying this phenomenon is the same. The presence of a large number of spikes and positive discharges after shock, however, is confirmatory evidence.

2. *The Relationship Between Shock Interval Factor and Postshock Electroencephalographic Changes.*<sup>8</sup>—In 44 cases having pre-

TABLE 1

## CLASSIFICATION OF ELECTROENCEPHALOGRAPHIC CHANGES FOLLOWING ELECTRIC SHOCK

Total No. of cases	Type of change	Number	Percent of cases
44	General voltage increase, 25% to 150%.	28	63.6
	(a) Marked .....	13	29.5
	(b) Moderate .....	15	34.1
54	High voltage bursts (3-4 p.s. and 5-7 p.s.)	18	33.3
	(a) Marked and very frequent in any 10-30 sec.....	14	25.9
	(b) Moderate and less frequent (once or several times in 30-180 sec.)	4	7.4
44	Long slow wave runs (3-7 p.s.) for 1-3 seconds in any 10-20 sec.	20	45.4
	(a) Marked .....	13	29.5
	(b) Moderate .....	7	15.9
44	Increase or incidence of single delta waves (3-4, 5-6, 7-8 in any 10-40 sec.)	34	77.2
	(a) Marked .....	20	45.4
	(b) Moderate .....	14	31.8
44	General slowing of fundamental alpha wave band by 2 to 4 cycles p.s.	8	18.1
44	Retention of or emphasis on high frequency band (14-18 p.s.)	4	9.1
44	Spikey waves, medium to high voltage positive discharges, diphasic spikes, broad-based, cone-shaped waves of positive sign (slow, or normal) in any 5-60 sec...	37	84.0
	(a) Marked .....	20	45.4
	(b) Moderate .....	17	38.6
54	Abortive or genuine larval spike-and-wave pattern once in 10 sec. to once in 20 min.	22	40.7
	(a) Marked .....	5	9.26

A quite important though rare or even occasional feature is the occurrence of abortive spike-and-wave pattern, 2 to 3 per second, like larval petit mal discharges in 40.7% of cases after shock but not before (figs. 1, 2 and 3). Grinker and his co-workers (5) but not Placella *et al.* (2) have found spike-and-wave formations. We have never seen long continuous bursts of these patterns following shock. Gibbs, Gibbs and Lennox have pointed out in their numerous studies the association of this pattern with epilepsy. The presence of this pattern after shock indicates that there is some electroencephalo-

and postshock EEGs 10 showed marked electroencephalographic changes, 7 moderate, 22 mild and 5 no change. The range of shock/interval values (S/I) for marked electroencephalographic changes was from 22.8 to 550 (median 207), for moderate changes 33.3 to 300 (median 90.9), for mild changes 9.1 to 157 (median 39.8), and for no change is 21.4 to 100 (median 83.3). This obviously shows that there has been definite overlapping. This might indicate that shock/interval

<sup>8</sup> Shock/interval = Number of shocks  $\times$  100/interval between last shock and postshock EEG.

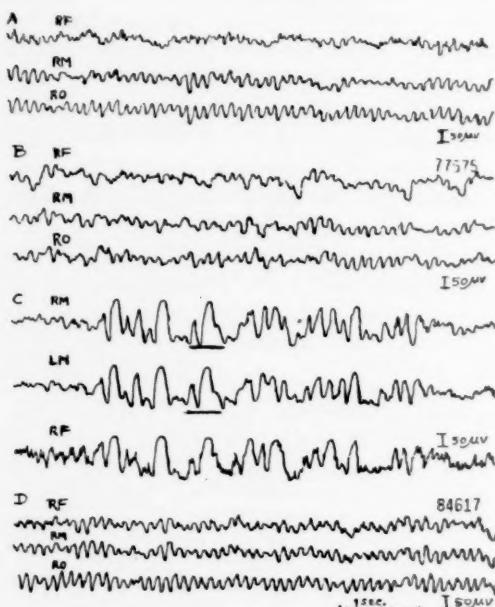


FIG. 1.—The relationship between shock/interval and electroencephalographic changes.

A. Before shock. Normal 9 per second waves. Right frontal (R.F.) area shows some extraneous changes due to eye potentials.

B. 24 hours after the second shock giving a high shock/interval value = 200. Notice a slight irregularity of the wave pattern and a few moderately slow (5 to 6 per second) single waves. Some extraneous potentials in R.F. Changes not shown here are: rare 6 to 7 per second stretches, some slow bursts, a few slow waves in temporal (shocked) areas and many bursts of 6 to 7 and 2 per second waves following, not during hyperventilation. A high shock/interval value, 200, is associated here with mild changes because the shock threshold has not yet been reached.

C. 72 hours following the fifth shock, giving a high shock/interval value: 166.6. (See page 51 for explanation. Note the high voltage bursts of 6 to 7 per second waves and of abortive spike-and-waves, 2 per second underlined. These bursts come from all areas simultaneously every one-half minute to one minute. Other shock effects not shown here are: many high voltage positive discharges, a general voltage increase and a very marked hyperventilation effect. Except for these stretches containing bursts this patient (C.F.) has retained, on the whole, her preshock general frequency of 9 per second. The shock threshold was reached at the fifth shock or earlier.

D. 7 days following the fifth shock giving a relatively low shock/interval value: 71.5. A disappearance of most of the shock effects and a resumption of the preshock pattern is evident. Changes not shown here are: rare 6 to 7 per second stretches of some cone-shaped positive spikes, a few abortive spike-and-wave patterns, and an inconspicuous hyperventilation effect. This patient is regarded as having had a rather low shock threshold with a marked postshock effect, and a short subsidence time. Time and 50 microvolt calibrations are marked on this and the succeeding records.

values are unrelated to electroencephalographic changes, but this is not so. The overlapping might be due to (1) faulty qualitative classification of degrees of electroen-

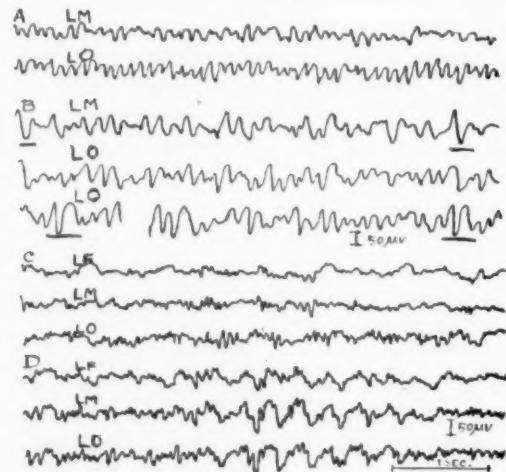


FIG. 2.—Differential electroencephalographic changes following electric shock.

A. Before shock. Normal 9.5 to 10 per second waves in the left motor and left occipital areas.

B. 11 days following 10 shocks giving a moderate shock/interval value: 90.9. Note the general slowing of the frequency of the waves to 7 to 8 per second of high voltage waves with interspersing 5 per second waves. This pattern has persisted throughout the whole recording. Note the underlined diphasic spikes, some positive discharges, two underlined broad spike-and-wave patterns of 3 per second frequency. During the recording many single 3 to 4 per second waves are noticed but no slow high voltage bursts, nor was there a remarkable hyperventilation effect. This patient is regarded as showing a general slowing of the alpha band and a moderate shock effect.

C. Another patient. Before shock. Shows a high frequency, 13 to 16 per second, of rather sharp waves. An abnormal epileptoid record.

D. 5 days following 10 shock treatments, which gives a high shock/interval: 200. The high frequency waves are retained after shock. High voltage slow wave bursts 3 to 3.5 per second occur every few seconds superimposed by high frequency waves. No appreciable general slowing is noticed as was true in the previous case. These features have persisted throughout the record. Changes not shown here are: high voltage slow bursts in both temporal areas, and some hyperventilation effect. This shows a marked shock effect.

cephalographic changes, or (2) the intrinsic variability of the patient's response to shock. While the first is not impossible, it is not entirely probable. That the second is true is borne out by the following considerations. If marked and moderate electroencephalographic postshock changes are grouped to-

gether, 14 out of 17 cases (82.3%) fall within the range of 85.7 to 550 shock/interval values and 19 out of 22 cases (86.3%) showing mild electroencephalographic changes do not even attain the low end of the previous value for marked and moderate electroencephalographic changes, that is, not as high as the 85.7 shock/interval value. Five no changes range between 21.4 to 100 shock/interval values. This analysis shows that there is a definite trend for the higher shock/interval values to be associated with marked or moderate postshock electroencephalographic changes. The 3 reversals (that is, low shock/interval values being associated with marked or moderate electroencephalographic changes) can only mean that in these cases electroencephalographic changes have taken a longer time to subside than in those cases who have similar shock/interval values but have shown fewer electroencephalographic changes. But it can be reasonably assumed that if postshock EEGs had been taken earlier in the reversal cases than they were, the electroencephalographic changes would have been found in similar or greater amounts. With increasing postshock interval there should be a progression from greater to lesser changes. The 3 reversals in the mild group and 2 cases in the no change group having high shock/interval values but mild or no changes seem to indicate that there is either the factor of high shock threshold or that of quick subsidence time operative in these cases. In other words, unless an adequate number of shocks is given (shock threshold) or a postshock EEG is taken soon after the last shock treatment, the moderate or marked changes are not likely to be found. This is also responsible for the fact that (1) high shock/interval (S/I) values in 3 of our cases are associated with only moderate electroencephalographic changes and not marked electroencephalographic changes, and (2) that there is a very wide range of shock/interval values covering marked and moderate changes. The shock threshold or the subsidence time is likely to vary from patient to patient. One to 5 shocks have been found to be the shock threshold value in some cases. Those who have had no more than the threshold number of shocks usually show a quick subsidence time, that

is, their postshock electroencephalographic changes disappear quickly and the record returns to normal<sup>9</sup> (Fig. 1).

Of those who had marked voltage increase, 77.8% have high shock/interval values (over 85) although the reverse is not always true. Those who had a moderate increase in voltage have a wide range of shock/interval values. The reasons for lack of consistency in some of these cases are the same as given previously in regard to total electroencephalographic changes, namely, individual differences in (1) shock threshold and (2) subsidence time.

For 16 cases who exceeded 87.5 shock/interval values we wanted to see whether or not their preshock electroencephalographic records (normal, borderline or abnormal) had anything to do with the postshock electroencephalographic changes (marked, moderate, mild or no change). In common with other workers (7) we have found some individuals who show some relationship; i.e., the more abnormal the preshock EEG, the more noticeable the postshock electroencephalographic effect. But when the difference between the two distributions is checked by the chi square method, it is not found to be statistically significant at the 5% level. It is possible that a study based on a large number of cases might establish significance. But if we hold the shock/interval value over 87.5 and compare the normal preshock electroencephalographic group with the borderline-abnormal preshock electroencephalographic group we find the latter group (borderline-abnormal) differs from the former groups (normal) in having a greater amount of abortive spike-and-wave patterns under shock. Statistically this difference is not significant at the 5% level (.05), P (probability) being .10. That is, there are 10 chances in 100 that the borderline-abnormal

<sup>9</sup> Shock threshold refers to the number of shocks adequate to *initiate* quite noticeable electroencephalographic changes and not the number of shocks needed for very mild electroencephalographic changes or for continuing marked electroencephalographic changes. The term threshold is used in this special sense because some form or other of electroencephalographic changes transient for an hour to twenty-four hours is noticed even after the first shock. It is difficult under our procedure of taking postshock EEGs to determine the exact threshold for each patient.

group having more spike-and-wave patterns under shock than the normal is due to chance factors. In other words, although there is not conclusive evidence for a difference between these two groups in reference to spike-and-wave, there is a high probability that the borderline-abnormal group would show this characteristic more than the normal group. This result ties up with our previous observation of a certain similarity between the epileptic and the shocked brain.

Out of 22 cases<sup>10</sup> showing shock/interval values of 100 or over, 12 (54%) have special bursts in shocked areas, that is, the temporal areas, and of the 32 cases having less than 100 shock/interval values, 9 show bursts of shocked areas. Six of these 9 had shock/interval values as low as 50 or less. Here again the factor of low shock threshold or prolonged subsidence time (Fig. 3-B) is operative in relation to the phenomenon of special bursts in shocked areas. On inspection it is found that the low shock/interval values are due either to the small number of shocks (3 to 4) or long time interval even with a large number of shocks. For those who did not have any localized shock effect even with high shock/interval values, high shock threshold (*i.e.*, physiological resistance) or even quick subsidence time has to be postulated. The former or the latter fact can also easily explain the cases with low shock/interval values and no localized change.

Those 8 patients who have shown distinct general slowing of the alpha band following shock, have in most cases fairly high shock/interval values and are evenly divided between normal and borderline-abnormal preshock EEGs. Shock/interval values are also high for 4 patients with high frequency band although only 1 out of the 4 had a normal preshock EEG.

**3. The Relationship Between the Preshock EEG and the Psychiatric Classification.**—Table 2 shows that 50% of the whole group of 44 have normal preshock EEGs and 50% have either borderline or abnormal EEGs.

Coming to the five sub-groups, it is noticed

<sup>10</sup> Six cases having no preshock EEG are included here under the assumption that they did not have localized bursts of the temporal area before the shock treatment.

that psychoneurosis with obsessive-compulsive features and depression have the highest percentage of preshock electroencephalographic abnormality (80%), and psychoneurosis with depression alone the lowest

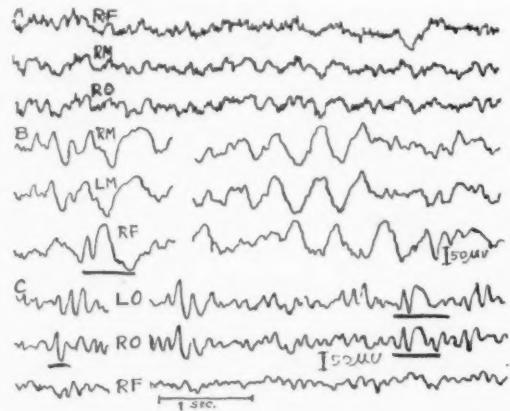


FIG. 3.—Electroencephalographic changes following electric shock.

A. Before shock. A high frequency (15 to 16 per second) and a slow frequency (5 to 6 per second) are mixed. This is an abnormal record. Some eye potential artifacts are seen in the R. F. lead.

B. 35 days following 8 shock treatments giving a low shock/interval value: 22.8. Note the extremely high voltage 2 per second bursts combined with a general slowing. This character appears in any 10 second stretch of the record. Note also some positive discharges and some abortive 2 per second spike-and-wave patterns. There is a 180° reversal of phase in the R. F. area which is probably genuine and not due to eye potential artifacts. This patient is regarded as showing a marked shock effect and a prolonged subsidence time. It is assumed in this case that a marked shock effect occurred long before this record was taken and if an EEG had been obtained soon after the last shock, many more changes would have been found, also the shock/interval value would have been much higher. If the electroencephalographic changes had not been pronounced soon after shock, they could not be as marked now as they are here thirty-five days following the last shock.

C. Another patient. 6 days after 10 shocks, giving a high shock/interval value: 166. Note the positive discharges, broad diphasic spikes and some 3 per second abortive spike-and-wave patterns. This patient did not have any preshock EEG with which to compare the postshock changes.

(25%), schizophrenia with depression being the second in the group with 62.5% borderline-abnormal EEGs. Are these differences between groups real? The probability values based on chi square as between group pairs are rather high—over .30 and not proved significant with two exceptions. Nor are

the values representing the exceptions proved significant at the 5% level, yet these values indicate that there is a high probability for schizophrenia with depression to be in the borderline-abnormal electroencephalographic group more than psychoneurosis with depression (.20) and for psychoneurosis with

case of those who had borderline-abnormal EEGs than in the case of those who had normal preshock EEGs (45.5%). The probability (P) of difference between these two groups is .10. This means that, although there is not any conclusive evidence that borderline-abnormal EEGs are associated with

TABLE 2  
PRESHOCK ELECTROENCEPHALogram AND PSYCHIATRIC CLASSIFICATION

Psychiatric classification	No. of cases	Preshock EEG						Classification of borderline and abnormal						
		Normal		Borderline		Abnormal		bord. and abn.	Mildly epileptoid pattern		Epileptoid pattern		Inde- termi- nate pattern	
		No.	%	No.	%	No.	%		No.	%	No.	%		
1. Schizophrenia with depression .....	8	3	37.5	4	50.0	1	12.5	62.5	4	50.0	0	00	1	12.5
2. Schizophrenia without depression .....	15	8	53.3	3	20.0	4	26.7	46.7	1	6.7	3	20.0	5	20.0
3. Psychoneurosis with depression .....	8	6	75.0	1	12.5	1	12.5	25.0	1	12.5	1	12.5	0	00
4. Psychoneurosis obsessive-compulsive and depressive features .....	5	1	20.0	1	20.0	3	60.0	80.0	2	40.0	1	20.0	1	20.0
5. Endogenous depression: manic depressive, involutional .....	8	4	50.0	3	37.5	1	12.5	50.0	2	25.0	1	12.5	1	12.5
Total .....	44	22	50.0	12	27.3	10	22.7	50.0	10	22.7	6	13.6	6	13.7

TABLE 3

## RELATIONSHIP BETWEEN TYPES OF PRESHOCK EEG'S AND THE EFFICIENCY OF SHOCK TREATMENT

Type	No.	Status at discharge					Index of efficiency * total weight number	Index of efficiency if all had recovered	% of efficiency
		Made wt. - 1	No change 0	Im- proved + 1	Re- covered + 2	Tot. wt. *			
Normal .....	22	1	3	15	3	20	0.91	2	45.5
Borderline and abnormal .....	22	0	6	8	8	24	1.1	2	55.0
Total .....	44	1	9	23	11	44	1.0	2	50.0
Mildly epileptoid and epileptoid pattern .....	16	0	5	5	6	17	1.2	2	60.0
Indeterminate .....	6	0	1	3	2	7	1.17	2	58.5

\* See page 50 for explanation. For example, total weight for patients with normal EEG; 1 times  $-1 = -1$ ; 3 times  $0 = 0$ ; 15 times  $+1 = +15$ ; 3 times  $+2 = +6$ ; Total = 20. Index of efficiency of treatment of patients with normal EEG:  $\frac{20}{22} = .91$ ; index of efficiency of treatment of those patients if all had recovered:  $\frac{(1+3+15+3)}{22} \times 2 = \frac{44}{22} = 2$ ; therefore, percentage of efficiency of treatment of all patients with normal EEG's:  $\frac{.91 \times 100}{2} = 45.5\%$ .

obsessive-compulsive and depressive features to be in the borderline-abnormal group more than any of the other three groups (.20, .15, .20). The relationship of this to the efficiency of shock treatment will be discussed in the next section.

4. The Relationship Between Preshock EEGs and the Efficiency of Shock Treatment.—Table 3 shows that the efficiency of shock treatment is greater (55%) in the

a higher percentage of efficiency of treatment, there is a strong possibility that the former is associated with the latter. Why the borderline or the abnormal brains, as a group, are likely to profit more from shock treatment than the normal brain is a question that cannot be easily answered. If this difference were seen in a larger sample, the question would still be open as to whether there is something intrinsic in the cortical electro-

dynamics or whether there is some other factor that is responsible for the differential improvement following shock. Section (6) throws additional light on this question.

5. *The Relationship Between the Number of Electric Shocks and the Efficiency of Treatment.*—There seems to be a tendency for patients receiving 4 to 6 shock treatment to profit more from the treatment than those receiving a smaller (1 to 3) or higher number of electric shocks (7 to 15). Statistically, however, differences in percentage of efficiency between any two of the groups are not proved significant. But it is worthwhile

shocked group. The efficiency of treatment of the control group <sup>11</sup> was 30.5%, and that of the shocked group 49% indicating a better result for the latter group. This difference is statistically significant at 2% level. In other words, we are reasonably safe in saying that not chance factors but real factors are operative to make the electric shock group profit more from shock treatment than the non-shock control group from pure psychotherapy. This is not an argument against psychotherapy but for electric shock.

The follow-up reports lend some strength to the results obtained. Thirty out of 39

TABLE 4  
INDEX OF EFFICIENCY OF ELECTRIC SHOCK TREATMENT AT TIME OF DISCHARGE

Psychiatric classification	No	Status at discharge				Tot. wt.	Index of * efficiency total weight number	Index of efficiency if all had recovered	% of efficiency
		Made worse wt. — 1	No change 0	Improved + 1	Recovered + 2				
1. Schizophrenia with depression .....	10	0	2	7	1	9	0.90	2	45.0
2. Schizophrenia without depression .....	17	1	5	8	3	13	0.765	2	38.2
3. Psychoneurosis with depression .....	10	1	1	6	2	9	0.90	2	45.0
4. Psychoneurosis-obsessive-compulsive and depressive .....	7	0	0	3	4	11	1.57	2	78.5
5. Endogenous depression, manic-depressive, involutional .....	10	0	2	5	3	11	0.91	2	45.5
Total .....	54	2	10	29	13	53	0.98	2	49.0

\* See page 50 for explanation.

to remember the influence of this variable in shock study.

6. *The Relationship Between Types of Mental Disorder and the Efficiency of Shock Treatment.*—Table 4 indicates that the percentage of efficiency of treatment of the group as a whole (54 cases) is 49% as compared with recovery which is 100% efficiency. Apart from other merits this result itself speaks well for electric shock therapy.

In order to determine the relative efficiency of electric shock we have compared this result with a control group of 64 unshocked non-organic, non-behavior cases who belonged to our five psychiatric groups and who had been admitted like the shocked group for observation and treatment. They received no shock treatment but psychotherapy in all its forms for three to four weeks like the

patients who could be reached within one year after discharge have maintained the benefit from treatments (24 retained improvement and 6 got better); 2 relapsed and 7 were as ill as before.

If we examine the sub-groups (Table 4) we find that patients with psychoneurosis and obsessive-compulsive and depressive features have as a group profited most from the treatment, the percentage of efficiency being 78.5, while the other groups have about the same low percentage of efficiency (38 to 45%). Difference in the mean improvement and hence in the percentage of efficiency of

<sup>11</sup> Made worse = 2 cases, no change = 27, improved = 29 and recovered = 6; total = 64. Total Wt. = 39, Index of Eff. =  $\frac{39}{64} = .61$ , % of Eff. =  $\frac{.61 \times 100}{2} = 30.5\%$ . See footnote, Table 3.

treatment and that better performance is associated with a lower level. In saying this, we are referring to the group of patients in the psychoneurotic group against whom the treatment was given. In the present study, the percentage of improvement in the psychoneurotic group is 45.0% and in the control group it is 38.2%. The difference is statistically significant at the 5% level as shown by the small sample theory as outlined by R. A. Fisher.<sup>12</sup> That is, the fact that the percentage of the efficiency of treatment as exhibited in the psychoneurosis, obsessive-compulsive and depressive group, is more than in the other two groups is not due to chance factors but most probably to real factors. And when we remember that it is this group that had the highest percentage of borderline-abnormal preshock EEGs (80%) (Table 2), we can draw the conclusion within the limits of our experiment that it is not all electro-cortically abnormal mental patients nor all types of mental cases but a particular type of mental patient (psychoneurosis with obsessive-compulsive and depressive features with the highest percentage of electrocortical abnormality) that offers as a group the highest possibility of improvement from electric shock. Whether this conclusion will be valid for a larger number of mental cases can be established only after further research.

#### COMMENT

There is evidence from our observations that although there is a certain uniformity of postshock electroencephalographic changes, the type and degrees of such changes are not universal. The amount of alpha waves (8½ to 12½ per second) has been reduced in favor of single or serial slow waves or high voltage bursts in a very large number of cases, but it is not necessarily true that there has been a consistent slowing of the alpha band in such cases. The latter phenomenon is found in only 18% of the cases (Fig. 2-B). This phenomenon is not caused invariably by a large number of shocks, as many patients having the same or more shocks with their postshock EEG taken within a week, do not show such changes. Nor is this due to the type of EEG before shock because about half of them had normal and the other half borderline-abnormal preshock EEGs. Nor has it anything to do with the psychiatric classification because all the clinical syndromes are about equally represented. And yet it is noted that this general slowing or

lack of general slowing may be definitely and predominantly associated with high voltage single slow waves or slow bursts or high voltage bursts of the usual waves. All these findings taken together make it seem likely that the general slowing of the alpha band on the one hand and the single or serial slow waves or slow wave bursts on the other are expressions of two slightly different neurophysiological events. This seems more plausible from the fact that those who have a preshock high frequency type of wave do not markedly exhibit a generalized slowing following shock but high voltage slow bursts superimposed with high frequency waves. These slow bursts disappear after a certain length of time leaving the original high frequency waves. Up till now this difference has not been clearly pointed out.

It is not possible to determine the reason for the following phenomena encountered in some patients: (1) low shock threshold (very few shocks causing much electroencephalographic effect), (2) high shock threshold (very many shocks needed for electroencephalographic effect), (3) short subsidence time for electroencephalographic changes, (4) long subsidence time for such changes, (5) initial voltage increases without much slowing, (6) high shock threshold with some slowing in combination with many alpha sine waves but without appreciable voltage increase, and (7) pronounced postshock hyperventilation effect or no hyperventilation effect. It is found that neither the low nor the high shock threshold is necessarily connected with normal or abnormal preshock EEGs. The voltage of the shock is not responsible as its effective range is limited. Nor is there any connection apparent between a low shock threshold and long subsidence time. It is likely that a vulnerable brain is a perseverating brain, but the low shock threshold has not always been connected in our experience with long subsidence time (Fig. 1-D). Voltage increase without the slowing of frequency following shock is thought by some (discussion by Gerard in 4) to be due to an increase in brain metabolism. And the voltage increase with concurrent slowing of frequency is considered by others (4) to be due to a decrease in brain metabolism. But as Gerard (4)

<sup>12</sup> Differences between other groups are not proved significant.

maintains, the shock effect cannot be explained in such simple terms. We feel that a decrease in metabolism cannot explain the incidence of many other shock effects—an increase in positive discharges, spiky waves, rare spike-and-wave patterns, lack of hyperventilation effect, etc.

We have taken follow-up EEGs in 4 cases, 5 to 9 months following shock treatment. Like other workers we find that although most of the pronounced initial electroencephalographic changes have disappeared there are still mild but noticeable residuals and these cases had either maintained their psychiatric improvement or recovered.

Finley and Campbell (13) have noticed a significant difference in the character of EEGs between a normal control group (215) and a schizophrenic group (500). The former group has 30% (22% and 8%), the latter 60% (34% and 26%) of borderline and abnormal EEGs. While our two schizophrenic groups (23 cases) have 52.1% of borderline-abnormal preshock EEGs, the total group of 54 (schizophrenic and non-schizophrenic) have 50% borderline-abnormal EEGs. Our group of psychoneurosis with obsessive-compulsive and depressive features has the highest percentage (80%) of preshock borderline-abnormal EEGs. This result is in general agreement with that found in a group showing obsessive-compulsive states observed by Placella and Nagler (14). Gibbs *et al.* (3) have also noticed many abnormal EEGs in the schizophrenic group. However, previous studies (6, 7, 9, 10, 11) of mental patients have been conflicting, some finding no electroencephalographic abnormality, others some abnormality. This difference in results among workers is due either to (1) sampling of cases or (2) electroencephalographic evaluation. The establishment not of simplified but of detailed uniform norms and their general acceptance would do away with one of the two reasons for discrepancies between the results of different workers.

In regard to percentage of efficiency of electroshock treatments of the 12 cases reported by Grinker *et al.* we find by applying our weights to their data that it amounts to 66.5% whereas ours is 50%. The whole

group of 108 cases of Smith *et al.* (1) would yield about 65% efficiency and their manic-depressive-depressed group and involutional group (69 cases) would yield about 80% efficiency, whereas our similar group showed only 45.5% efficiency of treatment. This difference again might be due to sampling differences or to certain differences in qualitative evaluation of the status of improvement.

It is recognized by different workers that psychotherapy is a needed adjunct to shock therapy. Both the methods have been combined in our cases. In fact, shock therapy is in itself a form of psychotherapy. While we cannot hold that the improvement immediately following the shock treatment is in the main attributable to psychotherapy its maintenance after discharge has been we believe, greatly helped by the latter.

This brings us to the question of the mechanism of improvement. A purely psychological or physiological explanation would be inadequate in this regard. One would hypothesize that a disruption of habitual patterns of neural discharge and a reorganization of new patterns in the cortex or in the subcortex following shock is responsible for improvement, but this hypothesis needs corroboration. The connection between this hypothesis and the electroencephalographic changes obtained needs to be shown, which has not been done. Nor is it entirely correct to state that it is only the memory defect (organic brain syndrome) consequent upon shock that causes previous unpleasant or untoward associations to disappear from consciousness, which brings about improvement. Most but not all of our cases of improvement show this memory defect to some extent at discharge, but a large percentage of improved or recovered cases in follow-up studies do not show this at all. A combined psychophysiological hypothesis of the mechanism of improvement would seem to be in order, but at the present state of our knowledge it cannot be worked out in detail. The very fact that a particular psychiatric syndrome having the largest electroencephalographic abnormality has profited most as a group from electric shock treatment suggests that both the psychological and physiological factors should be considered in building an adequate theory of the mechanism of improvement.

## SUMMARY AND CONCLUSIONS

The relationships between different variables incident to the program of electric shock treatment and electroencephalographic and clinical effects have been qualitatively and quantitatively worked out for 54 patients receiving such treatment for different types of mental disorders.

Different types and degrees of postshock electroencephalographic changes are noted. In general, the degree of electroencephalographic changes varies as the number of shocks administered and inversely as the interval in days between the last shock and the postshock EEG. There are, however, definite individual differences in shock threshold and subsidence time in regard to the degree of postshock electroencephalographic changes and also individual differences in regard to emphasis on some types of postshock electroencephalographic changes, rather than on others, indicating a differential cortical response to shock.

Fifty percent of the cases had normal and 50% borderline-abnormal preshock EEGs. Some having borderline-abnormal EEGs show a marked degree of postshock electroencephalographic changes but the difference between the two groups—the normal and the borderline-abnormal—is not proved significant in this respect. However, those who show some epileptoid features in their preshock EEG tend to exhibit rare or occasional larval spike-and-wave pattern following shock more than the normal group. A definite electroencephalographic similarity between the epileptic and shocked brain is noted.

There is some tendency for the psychoneurosis with obsessive-compulsive features and depression to be more in the borderline-abnormal preshock EEG group than schizophrenia with depression or psychoneurosis with depression.

Following a simple system of weighting degrees of improvement, lack of improvement and relapse, and calculating the index of efficiency of treatment and then the percentage of efficiency of treatment as compared with recovery, it is found that the percentage of efficiency of the electric shock treatment for the group as a whole at the time of discharge is 49% which indicates

a definite improvement over the preshock status. A control group of 64 patients receiving no electric shock has demonstrated only 30.5% efficiency of the treatment they received. The difference between the results of these two types of treatment is statistically significant. Seventy-six percent of the patients who received electric shock and who could be followed up between four months and one year following discharge have retained or bettered their improvement status. It is believed that psychotherapy played an important role in the maintenance of the improvement, though not predominantly in its initiation. There is a statistical indication that patients having psychoneurosis with obsessive-compulsive and depressive features and the highest preshock abnormal and borderline EEGs profit by such treatment more as a group than schizophrenia with depression and schizophrenia without depression. There is a suggestion that patients with preshock borderline-abnormal EEGs profit more as a group by shock treatment than those with normal EEGs.

No significant relationship has been discovered between the number of shocks administered and the percentage of efficiency of treatment.

The necessity for working out intimate relationships between different variables in electric shock treatment for a *larger* number of patients is indicated to help in the proper selection of cases for treatment and the prediction of its success. The treatment of data as utilized in this study would greatly facilitate the comparison of results from different clinics.

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## AMNESTIC-CONFABULATORY SYNDROME (KORSAKOFF PSYCHOSIS) FOLLOWING HEAD INJURY

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Confabulation is a common symptom in the state of prolonged confusion (acute traumatic psychosis) following severe head injuries. Since patients with confabulation often show disorientation and loss of memory for recent events, they are frequently referred to as examples of Korsakoff's syndrome even though polyneuritis is rarely present.

In 1887 Korsakoff (1) first described the conjunction of characteristic mental symptoms with both alcoholic and non-alcoholic polyneuritis and this was followed in 1889 by a more extensive article on the same subject (2).<sup>2</sup> The majority (30 of 44) of Korsakoff's cases were chronic alcoholics, but there was a wide variety of other conditions which he felt were of etiological significance: chronic infections (especially post-partum and other pelvic infections), tuberculosis, intestinal obstruction, typhoid, typhus, various neoplasms, jaundice and the ingestion of lead, arsenic, ergot and spoiled corn (maize) as well as H<sub>2</sub>S and CO poisoning. He recognized the frequent occurrence of intractable vomiting in these cases, but felt that the common factor in all was the presence in the circulating blood of toxins, whether endogenous or exogenous, and concluded that these toxins were responsible for both the polyneuritis and the mental symptoms. He was apparently somewhat in doubt, even in 1889, whether the mental symptoms he described could exist in patients without polyneuritis. On one occasion he wrote that the multiple neuritis was present "in nearly all cases," but on

the whole he seemed to favor the view that, although the signs of neuritis might be very inconspicuous in some patients, they were "always to be found on careful examination." However, because the signs of neuritis might be slight, he preferred the term "cerebro-pathia psychica toxemica" to his original "psychosis polyneuritica." As it turned out, neither term came into general use, and instead the name "Korsakoff psychosis" has come to be applied to the characteristic mental syndrome, usually with polyneuritis.

Meyer (3) in 1904 stressed the prominence of "fabrications," memory defects, and disorientation in the relatively small number of patients who developed "protracted deliria" (acute traumatic psychoses) following head injuries.

Schilder (4) in 1934 studied a group of 35 patients with acute psychoses following head injury. He found that following the initial state of coma with muscular relaxation there was a deep clouding of consciousness with general resistiveness. This was followed by a stage of far-reaching disorientation in space and time with considerable impairment of the gestalt function. As the disturbance of perception, and of the gestalt function, and the clouding of consciousness subsided the picture of a Korsakoff psychosis appeared. In his series confabulations were occasionally present after memory had returned to normal.

According to Bowman and Blau (5) cerebral symptomatology following severe head injury may be more or less demarcated into three stages: (1) coma; (2) state of delirium, twilight state, stupor or apathy; (3) amnestic confabulation or Korsakoff psychosis. These stages are not always clearly demarcated from each other, vary in duration, and may not appear in all cases. The Korsakoff picture when present lasts longer than the first two stages. The behavior of such patients is variable and may be orderly, apathetic or restless. Disorientation as to

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<sup>2</sup> We are greatly indebted to Dr. Paul I. Yakovlev for the translation of this article from the original Russian.

place and time is most noticeable and is usually based on the difficulty in retention. Confabulation, a most prominent part of the syndrome, is related to disturbances in orientation and recent memory. It may be extremely variable as to content and duration.

Merritt(6), in summarizing some of the more recent literature dealing with injuries to the head, comments that practically every patient with such an injury shows mental changes immediately after recovery of consciousness and frequently the steps to complete recovery are semi-stupor, bewilderment, a Korsakoff-like phase, and euphoria.

Since the term "Korsakoff psychosis" implies the conjunction of a peripheral neuritis with the typical mental symptoms, while in head injured patients as a rule the mental symptoms are present alone, it seems more suitable to apply to the syndrome as seen after head injury the term "amnestic-confabulatory syndrome." It is the purpose of this paper to discuss a group of patients who showed this syndrome following head injury.

Our report is based on the study of a series of 430 consecutive cases of head injury admitted to the Boston City Hospital. The majority of the patients were brought to the hospital by ambulance directly from the scene of the accident, and none was included in the series who had been injured longer than three days before hospital entry. Each patient was seen at least daily during the hospital stay.

In this study the term "confabulation" is applied to the fabrication of memories in which the patient related with conviction and circumstantiality events which had never taken place, or gave a false coloring to those that had happened. This concept is substantially the same as that of Hinsie and Shatzky(7).

Of the 430 cases with head injury there were 40 cases with prolonged confusion of whom 9 showed amnestic and confabulatory symptoms. All 9 patients were males, varying in age from 35 to 60 years. All but 2 were regularly employed. A brief clinical history of each patient is appended. The following points of interest will be noted.

Five of the 9 patients were known to be chronic alcoholics. Two others (H. B. and

G. N.) drank alcohol regularly but never in sufficient quantities to interfere with their work ("moderate" drinkers). One patient (H. J.) was reported to have drunk "very little alcohol since 1938." He also had a good work record. The final patient (C. J.) was allegedly not alcoholic, but in the three or more months following his injury during which he was confused and overactive he received as a sedative large amounts of paraldehyde, which he drank with the eagerness and pleasure that one is accustomed to see in chronic alcoholics. At any rate confabulation was first noted  $3\frac{1}{2}$  months after injury, after he had received large doses of paraldehyde for many weeks. We are not aware of any reports of true Korsakoff psychosis in a patient addicted to paraldehyde, but the occurrence of classical delirium tremens in such patients is of course well known.

In the group as a whole (430 patients) only 90 (21 percent) were known to be chronic alcoholics. It is therefore clear that the incidence of alcoholism is substantially higher in the group of patients with amnestic-confabulatory syndrome than in the group as a whole. As we have seen, of the 9 patients who developed an amnestic-confabulatory syndrome 7 were regular drinkers (5 excessive and 2 moderate) and in the other 2 there is at least some suspicion of regular alcoholic intake prior to injury, while in 1 of these 2 there was considerable ingestion of paraldehyde over a long period of time after the injury.

The course was uniformly favorable. All patients eventually made a full recovery and in all but one case a prompt one. The amnestic-confabulatory syndrome itself varied in duration from 2 to 44 days (average 15 days). This is in striking contrast to the course in patients with true Korsakoff psychosis (amnestic-confabulatory syndrome plus polyneuritis). In such patients the mortality rate is high (30-55 percent) and mental symptoms generally last for months or years and may be permanent(8).

Of the 9 patients, 6 had extensor plantar responses at some time following the injury and one of these had a left hemiparesis. Seven of the 9 had pink or bloody spinal fluid and 3 had proven skull fractures. As judged by these clinical and laboratory evi-

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dences of damage to the cranium and its contents it is evident that the patients who developed amnestic-confabulatory syndrome had, *as a group*, more severe injuries than average. It must be stated explicitly, however, that there were many patients with severe head injuries who did *not* develop this syndrome.

A useful index of the degree of severity of generalized damage to the brain caused by the injury is the duration of permanent, post-traumatic amnesia (P. T. A.). This is determined by questioning the patient about his first continuous memory after the accident at the time of follow-up visit one or more months after hospital discharge. In the 9 patients under discussion the duration of P. T. A. was less than 1 day (4 hours) in only 1 patient (a chronic alcoholic) and varied from 4 days to 6 weeks in the other 8 (average for all 9, 16 days). The average for the entire group cannot be given exactly because of inadequate follow-up in many cases, but was less than 12 hours.

It is of interest to compare the duration of P. T. A. in the 9 patients with amnestic-confabulatory syndrome with that in the 31 other patients with prolonged confusion in the whole group. Of these 31, 9 died in the hospital and 4 did not return for follow-up visit. One of the remaining 18 patients had a P. T. A. lasting 120 days. In the other 17 patients the duration varied from 6 hours to 23 days. The average for these 17 patients was therefore 8 days, or just half that for the 9 patients who developed amnestic confabulatory syndrome.

It is thus clear that as judged by permanent duration of amnesia for events after the time of injury, the 9 patients who developed amnestic-confabulatory syndrome had *on an average* a much more severe degree of injury to their cranial contents than did the group as a whole. Again we emphasize that by no means did *all* patients with prolonged amnesia caused by the injury develop amnestic-confabulatory syndrome.

There was no clear relationship between the duration of the amnestic-confabulatory syndrome and the maximum cerebrospinal fluid pressure as determined by lumbar puncture, or the presence of extensor plantar

response. There are only 2 patients without blood in their spinal fluids and these had the briefest durations of amnestic-confabulatory syndrome (2 and 5 days).

Of particular interest were the 4 patients (J. C., H. J., P. P., and F. M.) who continued to confabulate after recovery of orientation. In the first 3 of these patients confabulation did not begin until after recovery of orientation, but each of them continued to have repeated, brief periods of confusion and disorientation, often nocturnal, which persisted with diminishing frequency for as long as or longer than the tendency to confabulate. In these patients therefore the sensorium was not constantly or permanently clear during the period of confabulation. However, at the times of examination they had no difficulty in accurate orientation despite their fluent confabulations about events in the recent past.

The fourth patient (F. M.) began to confabulate while still disoriented, and continued to do so for 2 weeks after recovery of accurate orientation, uninterrupted by any transient episodes of confusion such as were seen in the first 3 patients.

The memory tests applied to these patients were not, unfortunately, sufficiently discriminatory to distinguish between defects in recent and immediate recall. Each of the 4 patients, when oriented, had no great difficulty in immediate recall ( $\frac{1}{2}$  to 5 minutes) as tested by repetition of digits, reproduction of a simple testable, or ability to persist in a simple task (subtraction of serial 7's from 100). Since the confabulations all concerned events of a few hours or days prior to the time of examination, it would appear that the ability to retain memory impressions for longer periods of time returned progressively in these patients and this is in fact in accord with general clinical observations on patients with true Korsakoff syndrome. That the simple data of orientation were retained successfully in these 4 patients considerably before other more varied and complex memory traces would seem to favor the view that the complexity as well as the freshness of the memory is a significant factor in the ability of the patient to reproduce it.

## CASE HISTORIES

*H. B.*, single, white, male truck driver, aged 55 years, was admitted June 9, 1943, in a state of coma with multiple contusions of the face and body. He was described as a steady worker with a history of moderate alcoholic intake for many years. Six hours after admission he was conscious, but apathetic, disoriented, confused, and confabulated freely when questioned about events in the immediate past. Neurological examination was not remarkable, but the cerebrospinal fluid was under pressure of 200 mm. H<sub>2</sub>O and bloody in color. Six days later pressure was 110 mm. and color yellow. The next day he was more responsive. His behavior varied from apathy to restlessness with periods of confusion and disorientation. He was often incontinent of urine. In the month of July he became less restless but developed euphoria. He would have clear periods during the day but at night would usually become confused again. Confabulation and disorientation persisted until July 23. He continued to improve, was well oriented, responded well to questions, and was discharged August 3, 1943.

*C. J.*, married, white male, a policeman, aged 35 years, was admitted to the hospital November 15, 1943, in a state of coma with multiple contusions of the face and body. There was no history of alcoholism. Neurological examination was essentially normal. The cerebrospinal fluid was pink in color and the pressure was 150 mm. H<sub>2</sub>O. He recovered from coma 3 hours later, but was markedly confused, disoriented, irritable, incontinent, and required repeated doses of paraldehyde for sedation during several weeks. He then became docile and had periods of emotional lability. A grand mal seizure occurred January 27. On February 1 he began to confabulate, stating that he had been out with some friends the night before and that he had just come back from finishing a large breakfast. Confabulation persisted for a week and then ceased and simultaneously the patient became oriented but still showed periods of irritability and restlessness. He gradually improved and was discharged March 14, 1944, still slightly euphoric and with some emotional lability.

*J. C.*, married white male, a laborer, aged 41, was admitted to the hospital September 5, 1942, in a state of semi-coma with laceration of the scalp, linear fracture in left temporal region and a cerebrospinal fluid pressure of 120 mm. H<sub>2</sub>O, pink in color. Neurological examination showed a Babinski sign on the right. He had a history of chronic alcoholism and of a mild, acute, paranoid, psychotic episode in 1936. During the early course of his stay in the hospital was drowsy, disoriented and restless. He was often incontinent of urine. From September 15 on he was correctly oriented for person, place and time, but was still incontinent of urine at times until October 1 and occasionally required restraints at night during episodes of confusion, probably with hallucinations. He first confabulated on September 22 and persisted in his

confabulation for 6 days. Most of the content involved visiting friends and going out of the hospital for work, etc. He improved slowly and after October 1 was consistently lucid and cooperative. He was discharged relatively asymptomatic with a normal mental state October 21, 1942.

*H. J.*, a married, white male, a special police officer, was admitted to the hospital October 3, 1943, in a state of coma with laceration of the scalp. The cerebrospinal fluid was under pressure of 250 mm. H<sub>2</sub>O and was bloody in color. There was a fracture of the left frontal region. He was a policeman in the Navy Yard and had a good work record. There was no history of alcoholism or mental or nervous symptoms, nor any family history of psychiatric abnormalities. For the first few days following trauma patient was oriented and had good insight into his condition. However, on October 7 he became confused, combative and restless. Four days later he became somewhat lethargic and confabulated freely. When questioned he gave accurate data of time and place, but a few minutes later tried to get out of bed, calling out that he was going to work, stating that he had been out to dinner with a friend, that he had gone to the Lodge, and that he had returned early that morning. He further reported visits with various friends and told of the various things he had been doing. This persisted until October 18, but throughout this period the patient was oriented for time, place and person for the most of the time, although he still had periods of confusion until October 22. Thereafter he improved rapidly although he had several periods of nocturnal confusion. After October 26 he was well oriented, amiable, and responded well to questions. He was discharged on November 17, 1943.

*G. N.*, married, white male, an accountant, aged 48 years, was admitted to the hospital January 29, 1943, a half hour after having fallen down two flights of stairs. On admission he reacted only to painful stimuli. The right upper eyelid was ecchymotic, but there was no other external evidence of injury to the head. Neurological examination revealed a left Babinski. Lumbar puncture yielded grossly bloody fluid under pressure of 300 mm. water. Past history was not remarkable except for moderate alcoholic intake for many years which had never interfered with his work. Immediately following hospital entry patient was drowsy, apathetic and incontinent of urine with occasional periods of restlessness. These symptoms persisted during the first 10 days. At that time a bilateral, subtemporal exploration was performed and a right subdural hematoma evacuated. Four days after operation he was first noted to confabulate and this persisted for 6 days. During this time he was overactive, talkative and euphoric and required mechanical restraints at times. He was still disoriented for time and place, but no longer for person. Thereafter improvement was rapid, and by the time of discharge (10 days after confabulation had stopped) he was oriented, alert and well behaved. There was a persistent intellec-

tual deficit for several months, however, and patient was unable to return to full work as an accountant until September 1943.

*P. P.*, a 58-year-old, white, married male who was struck by a taxi October 8, 1942. On admission to the hospital he was drowsy but responsive and was oriented for place, but not for time or person. There were multiple scalp lacerations. Neurological examination was essentially negative. There was a past history of chronic alcoholism and several previous head injuries. Lumbar puncture yielded clear fluid under normal pressure (140 mm.). Two days after entry patient was described as disoriented, expansive and rambling in his conversation, but confabulation was not noted until 2 days later. By this time (October 12, 1942) patient was accurately oriented, but throughout this period was restless, irritable, often required mechanical restraint, and was incontinent of urine. By October 17 confabulation had disappeared, patient was continent of urine and no longer required restraint. Four days later he was discharged to a chronic hospital.

*J. O.*, a 43-year-old, white, married male fell down a flight of subway stairs November 29, 1942. On admission to the hospital an occipital laceration was noted. The right pupil was larger than the left and there was a left Babinski. He was drowsy, but could be roused by painful stimuli or shouting. He responded imperfectly to questions about data of orientation. There was an odor of alcohol on patient's breath and he was reported to be a chronic alcoholic. Lumbar puncture yielded pink fluid under pressure of 215 mm. During the first 3 days patient was roused only with difficulty and he remained somewhat drowsy until December 15. On the second hospital day confabulation was first noted and this persisted until December 20 despite gradual increase of activity to normal and improvement in orientation. He was discharged free of symptoms December 21, 1942.

*F. M.*, a 39-year-old, white, single male was struck by a truck October 6, 1942. On admission to the hospital he was comatose and bleeding from the left ear. There was a fracture of the right forearm. Neurological examination showed a right Babinski. Patient had been excessively alcoholic for many years. Lumbar puncture yielded bloody fluid under pressure of 250 mm. Patient had periods of restlessness, requiring restraint for 12 days after entry. He was drowsy at other times during the first week in the hospital but not thereafter. On October 10 confabulation was first noted and persisted for a month, although patient was correctly oriented by October 24. On December 4 he was discharged to a chronic hospital. At that time he was clear, cooperative and cheerful although still somewhat garrulous.

*W. K.*, a 63-year-old, single, white male fell down a flight of stairs August 4, 1942. He was alert and conscious on entry, but showed some elements of confusion (gave the year as 1943).

There was an occipital laceration. Neurological examination was normal. Patient was a known chronic alcoholic. Lumbar puncture yielded clear fluid under 160 mm. pressure. Patient remained in the hospital for only 2 days. During that time he was somewhat confused and at times incontinent of urine, and he confabulated freely. When seen one month later at follow-up clinic patient was oriented and spoke accurately and pertinently. Permanent post-traumatic amnesia was 6 hours.

## SUMMARY

1. Of a total of 430 patients with head injury, 40 had prolonged confusion following the injury, and of these 9 showed amnestic-confabulatory syndrome during their hospital stay. None of the 9 showed evidence of polyneuritis.

2. All 9 patients were males and 5 (55 percent) were chronic alcoholics prior to injury. This is in contrast with the 21 percent incidence of alcoholism in the group as a whole. In addition 2 others were steady but "moderate" drinkers and there was some suspicion of alcoholism in the 2 remaining. One of these received large amounts of paraldehyde in the 3½ months after injury prior to the development of an amnestic-confabulatory syndrome.

3. All 9 patients recovered. The duration of the amnestic-confabulatory syndrome varied from 2 to 44 days (average 11 days). This is in striking contrast to the grave prognosis in patients with amnestic-confabulatory syndrome with polyneuritis.

4. As a group the patients who developed amnestic-confabulatory syndrome suffered relatively severe injuries to cranial contents as judged by presence of abnormal neurological signs, presence of blood in the cerebrospinal fluid, and duration of permanent post-traumatic amnesia. However, many other patients with equally severe injuries failed to develop the amnestic-confabulatory syndrome.

5. There was no clear relationship between duration of amnestic-confabulatory syndrome and the maximum cerebrospinal fluid pressure as determined by lumbar puncture, or the presence of extensor plantar responses. The 2 patients without blood in their cerebrospinal fluid had the briefest duration of amnestic-confabulatory syndrome (2-5 days).

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## SPONTANEOUS AND INDUCED EPILEPTIFORM ATTACKS IN DOGS, IN RELATION TO FLUID BALANCE AND KIDNEY FUNCTION<sup>1</sup>

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Though this paper does not profess to uphold any positive theory of the nature of epilepsy, the following relations between convulsive seizures in man and dog appear worthy of notice.

(1) Rowntree<sup>(1)</sup> published pioneer observations on water intoxication, induced by administration of water to patients or animals, with inhibition of diuresis by posterior pituitary extract or by sufficiently large quantities of water alone.

(2) The rôle of disturbed water balance in human epilepsy has been reviewed by Fay<sup>(2)</sup> and numerous other writers, but this theory has lacked proof and is today completely rejected by some neurologists who also lack proof for their opinions.

(3) A convulsive disorder, called epilepsy by veterinarians, is probably even more prevalent among dogs than epilepsy is among mankind. The attacks follow a definite and precise pattern, but neurologists have entirely overlooked the opportunity offered by this canine disorder for experimental investigation of human epilepsy.

(4) Our previous studies (Lundin<sup>(3)</sup>, Marks and others) furnished the first demonstration of delayed water diuresis in partially nephrectomized dogs. During the years from that time to the present we have repeatedly noticed that some (but not the majority) of dogs with partially resected (usually also explanted) kidneys are subject to epileptiform seizures either spontaneously or on administration of comparatively small amounts of water. The pattern of the attacks is unmistakably identical in these animals, and in Rowntree's water intoxication, and in the spontaneous "epilepsy" known to veterinarians. I mentioned these observations in papers<sup>(4)</sup> read in 1942, and at the convention of the American Medical Association

showed a moving picture, which is still available for loan to persons interested in the character of these attacks.

(5) Independently of these experiments, several neurologists<sup>(5)</sup> have recently shown that water administration, preferably combined with pituitary antidiuresis, can elicit epileptic seizures in predisposed individuals, and have used this as a test of latent epilepsy in doubtful cases, including the examination of army recruits.

(6) Ignoring focal Jacksonian lesions, a reproduction of true idiopathic epilepsy has never been accomplished in experimental animals. Such a reproduction would be the most valuable of all means for establishing the nature of epilepsy and clearing up the existing obscurity in many other respects. Our previous clinical studies of diet<sup>(6)</sup> agreed with all other existing knowledge that epilepsy cannot be on a par with such conditions as edema and hypertension as regards direct causation and control through salt-and-water metabolism or kidney function; and this fact must be sufficiently obvious from the absence of association of epilepsy with kidney disease clinically. Though the relation must be more recondite and complex, only shallow thinking can ignore the reality of the connection between convulsions and water balance. Starting from the above-mentioned observations, this paper will describe experimental attempts to reproduce idiopathic epilepsy, which had to be abandoned at the present suggestive stage, but which could have reached a definite conclusion either positively or negatively except for the artificial obstacles which have delayed or blocked all phases of the broad general research of which this is an incidental part.

### PATTERN OF SEIZURES

It might be imagined that dogs are subject to a certain type of convulsions, regardless of the cause. Comparisons have been made with uremia, rabies and strychnine poisoning,

<sup>1</sup> From the Department of Physiology and Biochemistry, New York Medical College, New York City.

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none of which offer the slightest resemblance to the pattern which occurs uniformly in the spontaneous canine "epilepsy," and in intoxication with water alone or reduction of diuresis by pituitrin or partial nephrectomy. These attacks may be divided, like human epilepsy, into the two degrees or stages of petit mal and grand mal.

The petit mal stage may consist of general muscle twitchings or slight spasms, or of a noisy semi-delirious state, with dazed stare, frightened behavior, wild running or whirling, bumping recklessly into obstacles, and attempts to jump over walls. This may constitute the entire attack or may pass over into grand mal.

The full convulsive state may be thus ushered in or it may sometimes occur suddenly with scarcely noticeable warning. It consists of violent tonic followed by clonic spasms, with unconsciousness, foaming at the mouth, passage of urine and feces, and sometimes biting of the tongue. It lasts from one to several minutes; then the dog becomes semi-conscious, struggles to his feet and staggers around in a dazed state, generally silent but sometimes in a noisy delirium. Typically, the attack thus passes off; the dog is depressed for one to several hours, either apprehensive and trying to hide or else dazed and sluggish, and then returns slowly to normal. Occasionally the attack may be repeated within a short time. A status epilepticus of prolonged or multiple seizures is also possible.

#### INCIDENCE

Statistics covering not merely the pampered pets treated by veterinarians but the entire canine population would be of interest for comparison with human epilepsy, but are not available. Among 541 newly arrived stock dogs watched for 2 weeks or longer, spontaneous convulsions of the type described were seen in 19 (approximately 2.8 percent). Observation of 13 of the 19 dogs was continued for 3 months or longer, and only 2 remained persistently subject to the attacks. Errors from convulsions occurring at night or at unobserved times are practically eliminated if there is no spilling of the food or water dishes, which always occurs with attacks. But it is obvious that epileptic seizures

may be spaced at greater intervals than 3 months or may vary with exciting causes.

A better basis for diagnosis was furnished by the susceptibility to water intoxication. A series of 326 dogs thus tested were partly different from the previously mentioned series, because some of those observed for convulsions were not given water tests, and some of those tested with water were not kept under long observation for spontaneous attacks. Among the 19 animals with spontaneous convulsions, 13 were tested with water and all showed varying degrees of subnormal tolerance. In addition, 11 dogs which were free from spontaneous convulsions exhibited similar degrees of reduced tolerance in the water tests. Eight of these latter animals were kept under observation for 3 to 6 months; 2 of them could sometimes be thrown into convulsions by strong excitement but the others remained free. The apparent fact that a reduced water tolerance in dogs does not fully coincide with a liability to spontaneous seizures may be suggestive regarding the reliability of the water test for the diagnosis of human epilepsy.

#### ETIOLOGY

The following observations on predisposing and exciting causes apply both to the spontaneous convulsions and to the susceptibility to water intoxication, to be described later. Sex is immaterial. Breed could not be judged; and although a predisposition of some high-bred types is a plausible assumption, actually the few seemingly pure-bred animals in the series proved insusceptible, while some of the most susceptible individuals were street mongrels. Age was negative according to experience with young animals, for notwithstanding the supposedly more sensitive nervous system, puppies at various ages were not more susceptible to water intoxication, and the series of spontaneous convulsions included only one puppy and one nearly grown dog. The seasonal influence mentioned by veterinary writers was confirmed. Doubtless more "mad dogs" are shot by excited policemen or citizens on account of harmless epilepsy than true rabies. This predisposition in hot weather is not always or necessarily due to excessive drinking, for attacks may occur when the dog is

not thirsty and also has not taken water for a considerable time. Veterinarians attribute convulsions to intestinal parasites or to practically anything else that happens to be wrong with the dog; but most of these animals came to autopsy and the presence or absence of the usual kinds or numbers of worms had no perceptible relation to the convulsive tendency. There are only speculative explanations why several consignments of new dogs will furnish not a single example of spontaneous convulsions or sensitiveness to water, and then perhaps half the animals in a certain consignment may prove susceptible. The most probable causes are nervous or infectious.

Nervous influences are powerful, as veterinarians state. For this reason, dogs excited after transit may exhibit convulsions, which remain absent after they have become quiet and contented. The commonest time for seizures in predisposed dogs is when they are let out in the yard with other dogs for exercise. In water tests, when one dog sets up the typical insane cries they may precipitate attacks in other dogs which might otherwise have remained non-convulsed, and this factor must be allowed for in conducting the tests. In the frightened stage, a dog may bite if touched suddenly or by a stranger; but he is not truly savage and can be picked up soothingly by someone whom he knows and trusts and very often by simple petting can be prevented from passing into the convulsive stage. Nevertheless mere hysteria is not everything, inasmuch as the majority of timid or terrified dogs do not exhibit convulsions or reduced water tolerance, and in water tests it is not uncommon for dogs of nervous temperament to be refractory and phlegmatic animals to be susceptible. Some of the dogs permanently subnormal in water tolerance have been of contented placid disposition.

Distemper is the only infection known to have a relation to the convulsive tendency, and its influence, though obscure, may be intimate. The fits of distemper may conform to the "epileptic" pattern, and dogs with the recognizable disease were excluded from the statistical series. Dogs with the nervous form of distemper are usually subnormal in water tolerance, but those with merely catarrhal, intestinal and cutaneous symptoms have proved no more susceptible to water

intoxication than normal animals in equally poor nutrition. A few dogs were tested after recovery from nervous distemper, and tests were made on several others with chorea which was supposedly a sequel of distemper. One convalescent and one chorea dog proved sensitive to water, while the others had normal tolerance. Here even the positive examples did not establish distemper as a cause, since these dogs were not tested prior to the distemper. Nevertheless the general impression is in favor of the opinion of veterinary writers, who include distemper in the etiology of "epilepsy."

The nutritive state is apparently immaterial as regards healthy leanness or fatness, but senile obese animals with suspected kidney impairment may be less tolerant of water. Dogs should not be fed on the day of a water test, presumably because the salts of the food inhibit the effect until they are disposed of. Longer fasting reduces the water tolerance slightly, but the longest fast-period tried, namely one week, did not make an extreme reduction. These statements apply to tests made on single days of a fast, because repetitions on successive days have a sensitizing effect, as mentioned subsequently.

Diet was a negative factor in comparisons between high protein or carbohydrate (meat or bread) and high salt or nearly salt-free rations. Notwithstanding theories of brain edema, this latter result was to be expected, because salt is known to inhibit the convulsive effect of water administration, while salt-free diet is inimical to edema. As already mentioned, any connection of water balance with epilepsy cannot be of such a simple and direct character as is the case with ordinary renal-vascular symptoms.

#### PATHOLOGY

Canine human epilepsy is recognized as being usually unassociated with anatomic lesions. Rountree's studies indicated that the disturbance in water intoxication is functional. The autopsy findings in the present series were confirmatory. The mechanism of the water action is unknown. A flushing out or a dilution of some mineral constituents, or a specific rôle of the intestine or the intestinal route of absorption might be considered speculatively, in view of the negative effect

of intravenous water injections. An increased hydration of the body or the nervous system harmonizes with some theories of epilepsy, but the apparently complex and irregular character of this relation has led some neurologists into a too rash denial of its reality.

#### WATER TEST

The dog, unfed on the day of experiment, is given by tube about as much water as the stomach can comfortably hold, ranging from 200 cc. for small dogs to 500 cc. for large ones. This "dose" is repeated at half-hourly intervals. Precise accuracy in either absolute quantity or relation to body weight is neither necessary nor practicable, because there is no way of controlling or regulating the vomiting of different animals. First salivation and then nausea always occur. The vomited water is replaced as far as feasible, but even the most persistent vomiting does not necessarily spoil the result. If the stomach and intestine are merely kept as full as possible of water for a sufficient length of time, all dogs will sooner or later develop convulsions. After many preliminary trials, the test was finally standardized in the form of five "doses" of water, requiring 2½ hours. Watching for possible delayed reactions is continued for an hour or two longer. According to the experience, this test never produces convulsions in normal dogs but always produces them in "epileptics" and also in a few other animals. Whether the reduced water tolerance in this latter group is diagnostic of a latent "epilepsy" is not fully determined.

As shown by Rountree, physiological salt solution administered in the same manner as water causes no convulsions, though the nausea is similar and the diarrhea greater. Maximum intravenous injections of physiological saline (up to half or more of the body weight) kill dogs by pulmonary edema, with ascites but without convulsions or brain edema. Water intoxication causes convulsions only with administration by stomach. Infusion of water by vein leads to weakness and finally death in quiet unconsciousness.

#### STATUS EPILEPTICUS

Veterinarians recognize a condition of frequent or continuous seizures, ending fatally within a few days. Two such examples were

seen in this series, though distemper was not positively excluded as a cause.

Such a condition can be reproduced by water administration in normal dogs, and still more easily in those having reduced water tolerance. If water is given in the usual way and the administration stopped with the first convulsion, a normal dog always recovers. But, as Rountree found, when the water doses are repeated beyond this point the convulsions continue and the animal weakens and dies within a few hours.

One main feature of the present work was an attempt to produce chronic epilepsy or at least a state of permanently subnormal water tolerance. For this purpose, water was administered to normal dogs with all conceivable variations of time, quantity and other factors. Briefly, the result was negative with respect to chronicity. It is definitely impossible to condition a normal dog by any mode of water administration so as to obtain the desired reproduction of either human or canine epilepsy, namely a state in which the animal remains in good health for months or years except for the liability to occasional spontaneous convulsions or even an abnormal sensitiveness to water administration.

It is readily possible, however, to induce what may be called status epilepticus or at least an acute and fatal nervous disturbance. It is only necessary that the regular program, namely administering water to the point of the first convulsion, be repeated daily. The animal is not fed, but anyhow all food is soon refused. The water tolerance becomes reduced, and in a few days (3 to 5 days in these experiments) a normal nervous state is not regained. The convulsions continue, either a few times or indefinitely. There is a dazed mental state and a peculiar unsteady gait, which a neurologist who saw the animals described as resembling cerebellar ataxia. Without further water administration, there is an increase of ataxia, often spasticity, more or less tremors and outright convulsions, and general weakness. Death occurs thus within a few days after the last water administration.

The result is not explained by any gross abnormality discoverable at autopsy. Microscopic sections of the brain or spinal cord seem normal to ordinary examination, but no special stains or other intensive studies

have been possible. The essential point of interest is that death is due to a nervous or metabolic disturbance as a delayed after-effect of simple water ingestion.

#### ATTEMPTED SENSITIZATION

As already mentioned, the convulsions here described have a characteristic pattern which clearly distinguishes them from uremia, rabies or strychnine poisoning. A series of experiments, which need not be recounted in detail, were performed with graded doses of strychnine subcutaneously, to learn whether this simple motor excitation would sensitize the animals to simultaneous water administration. In general the results were negative. There was no true reduction of water tolerance. When the strychnine dosage became high enough, the resulting convulsions were of the typical strychnine character without the psychic features or other characteristics of water intoxication.

#### TREATMENT

As already mentioned, when water administration is stopped upon the occurrence of the first convolution, the attack is usually limited to the one convolution, or less often there may be several convulsions at varying intervals, but a normal dog always recovers. Just how far the water administration may be continued without bringing on the irreversible fatal nervous or metabolic process is uncertain and depends upon the susceptibility or strength of the individual animal.

It was previously noted that psychotherapy in the form of petting has a decided influence toward averting convulsions, in either spontaneous "epilepsy" or water intoxication.

Sedatives, notably barbiturate (nembutal), act still more powerfully by suppressing the entire attack if it has not progressed too far.

Logically, as anticipated from the negative effects of saline solution, salt is beneficial when given at a suitable stage of water intoxication. According to size, dogs can be given by stomach tube quantities of sodium chloride which would ordinarily cause vomiting, for example 100 to 300 cc. of a 2 to 4 percent solution. The retention and the benefit are explainable by the large quantities of water present in the stomach and intestine to mix with the salt solution. Intravenous injections

of hypertonic saline have also appeared beneficial but have not been sufficiently tested, especially as they are not easily given to the agitated animal without an anesthetic or sedative.

All these measures fail after too prolonged water administration on a single day. The death then may seem to be explained by simple constitutional weakness due to the general systemic disturbance. The neurological problem becomes more evident when water is administered on successive days, stopping each day with the first convolution. The resulting ataxic condition is not accompanied by extreme weakness on the first day of its beginning. But, without further water administration, the nervous symptoms progress and the nervous disorder is the only evident cause of death.

Attempts at treatment in this stage have almost uniformly failed. Besides the giving of sedatives and sodium chloride, the unsuccessful treatments have included forced feeding of milk and other foods, injections of calcium gluconate or parathyroid extract intended to increase blood calcium, feeding or injections of vitamine B complex for possible nervous benefit, and intravenous injections of hypertonic glucose solution for nutrition and for possible reduction of central nervous edema. The only animal which has recovered from a well developed syndrome of this kind is to be described later, in connection with kidney resections. Here the treatment consisted in the subcutaneous injection of large quantities of physiological salt solution. It is impossible to be sure whether this single result was accidental, because there has been no further opportunity for trials by reason of the interruption of the work.

#### KIDNEY EXPERIMENTS

This investigation originated from chance observations on dogs which were kept for long periods, sometimes for several years, with various degrees of kidney impairment produced by resections or intermittent clamping (4). The natural expectation of increased susceptibility to water intoxication in such animals, due to delayed diuresis in the same manner as with pituitrin administration, has proved unfounded. The experience in hundreds of tests may be stated briefly and arbi-

trarily. The variations of water tolerance among "normal" dogs are not evidently connected with faulty diuresis, for the passage of abundant pale urine by the susceptible animals is equal to that of the resistant ones. Also it is not true that dogs with partial kidney resection exhibit any general and uniform increase of susceptibility to water intoxication; on the contrary many of them with rather extensive resections remain refractory. The mere extent of kidney resection is not decisive, for dogs with acute or chronic uremia have never developed any condition resembling spontaneous epilepsy, while those subject to the seizures were typically lively, thriving animals with adequate kidney remnants and normal blood nitrogen analyses. The susceptible kidney-resected dogs passed abundant pale urine during the tests; furthermore they, like others, usually develop their spontaneous attacks not after eating or drinking but at other times, especially in the excitement of being let out for exercise just before feeding time. In the canine disorder, just as in human epilepsy, it is evidently a mistake to argue either for or against the water balance theory on any simple crude basis which would practically rank the nervous disorder on a par with ordinary renal-vascular phenomena.

After long and repeated failures, a few recent experiments have suggested a possibility of better success when sufficient time is allowed. The following record is illustrative.

A mongrel female, weighing 7.6 kg., received in June 1941, was subjected to 4 water tests in 3 months and proved refractory according to the standard adopted; *i. e.*, 5 "doses" of 300 cc. water at half-hour intervals caused no convulsions. In September the left kidney was explanted under the skin, and a subsequent water test was negative. In November the right kidney was removed, and a water test in December was still negative. In February 1942, after another negative water test, about one-third of the left kidney was removed. Water tests during the ensuing 4 months were variable. On one afternoon 5 "doses" were given without apparent result, but there were indications of a probable convulsion during the following night. On another occasion 3 administrations of 300 cc. water sufficed to bring on a convulsion, and in the remaining 2 tests 4 such "doses" caused attacks. The dog was kept in the hope of obtaining electroencephalograms, but time passed without treatment or tests of any kind, until in August 1942 a spontaneous convulsion occurred when the animal was

quiet in her cage. Three other typical seizures were seen in the period up to January 1943, and upsetting of pans in the cage indicated that a few other attacks probably occurred at night. In February a water test was given, resulting in a convulsion after 4 "doses." One week later the test was repeated and a convulsion occurred after 3 "doses." Although in all other dogs an interval of a week has sufficed to prevent any summation of the effects of water tests, in this instance a cumulative action is suggested, for on the day after the second test the dog was weak and unsteady, refused food and had 2 convulsions. On the following day both weakness and unsteadiness had increased so that standing and walking were almost impossible. According to the uniform experience with other animals, death within a day or two was expected; but at this point a trial was made of large subcutaneous injections of physiological saline, totalling 1200 cc. for the day. On the next day the dog was slightly better in strength and free from convulsions, and the injections were repeated. The day after that, it was possible to give milk by stomach tube, and thereafter the appetite and strength were slowly regained until the dog seemed again normal. In this attack urine was passed freely, and the non-protein nitrogen of the blood was normal as it had been at previous periods. Observation was then less close, but the normal appearance and behavior certainly continued until a day or two before May 20, when the dog was unexpectedly found dead. No cause was evident either in the healthy-appearing kidney remnant or in the general autopsy. It is uncertain whether there may have been any convulsive attacks during the day or two before death, and it can only be suspected that the death was due to "epilepsy."

Two other dogs with essentially similar records (explantation and partial removal of kidneys, repeated water administration) are still alive and vigorous approximately 2 years after the last water dosage, though one has slightly over-excitable muscular movements. Both animals have typical violent convulsions in their cages at irregular intervals, usually several weeks apart, without known exciting cause and unconnected with the taking of food or water. It is frequently possible to bring on attacks by turning these animals out for exercise with other dogs. It seems to be merely a question whether there is enough running and emotion to bring on the excited state which terminates in a typical convulsion.

#### ELECTROENCEPHALOGRAPHIC ATTEMPTS

A beginning was made in the taking of electroencephalograms by Dr. T. I. Hoen of the neurology department, with the cooperation of Dr. Otis M. Cope of the physiology department. It was readily possible to bring on attacks at will by administering water to the experimentally preconditioned animals, and to predict the time of onset of convul-

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TEMPTS

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sions, but several valuable dogs were killed by injection of curare at this point, and one suggestive tracing obtained was too brief to be satisfactory. Plans for overcoming these difficulties were terminated by the war.

### CONCLUSIONS

1. The so-called epilepsy which occurs spontaneously in dogs follows a distinct and plainly recognizable pattern. Various predisposing and exciting causes are discussed.

2. The water intoxication discovered by Rountree is characterized by precisely the same pattern of convulsions. It is readily distinguished from other forms of convulsions, such as occur in rabies, uremia or strychnine poisoning.

3. Dogs with spontaneous "epilepsy" are invariably subject to convulsions with administration of smaller quantities of water than normal dogs. Certain other dogs, which remain free from spontaneous attacks during many months of observation, exhibit a similar subnormal tolerance of water, which may possibly represent a latent or sub-threshold stage of "epilepsy." These animals are free from obvious renal abnormalities, and with water administration they pass large volumes of pale urine, so that the sensitiveness is not due to urinary suppression such as Rountree produced with pituitary extract.

4. Chronic susceptibility to water intoxication and also to spontaneous epileptiform seizures can apparently be produced by suitable kidney resections together with repeated overdosage with water. It is still not certain whether this result can be obtained in all dogs or whether some undetectable individual predisposition plays a part. Although water elimination is known to be retarded after sufficient reductions of kidney tissue, the abundant polyuria in water tests seems to rule out this superficial explanation of the convulsions. The occult character of the relation with water balance or tissue hydration seems comparable with that in human epilepsy.

5. The name of epilepsy, applied by veterinarians to the canine disorder, seems justified

by a number of features, including the ability to elicit seizures by water administration on the same basis as used by some writers for the diagnosis of latent epilepsy in patients. Attention is called particularly to the neglected opportunities for experimental study of the disease in dogs.

6. The apparent success in producing chronic idiopathic epilepsy for the first time experimentally is sufficiently important to deserve confirmation with a sufficient number of animals to test the influence of individual or accidental factors.

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## A PSYCHIATRIC STUDY OF ABSENCE WITHOUT LEAVE

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Absence without leave is one of the most serious behavior maladjustments with which the army has to deal. Even more important than the appalling loss of soldier man hours involved is the detrimental effect on training efficiency and morale. Although it is widely recognized that many of the offenders, particularly the recidivists, show significant evidences of mental abnormality, no psychiatric study of this important problem has been published in this country.

During the first 10 months of 1943, a group of men who had been reported absent without leave were routinely referred to the psychiatric clinic of the headquarters staff of the Antiaircraft Replacement Training Center at Fort Eustis, Virginia.<sup>1</sup> These men were given a complete psychiatric examination. This included a brief neurological survey, a personal interview lasting about an hour, and a detailed inquiry about the man from the agencies on the post, such as the cadre of the training battery and the infirmary, that had personal knowledge of his behavior. In some cases, particularly those in which mental deficiency was thought to be present, additional psychometric examination was given—generally the full scale Wechsler or the 2abc. In a few instances the Red Cross obtained a social history from the soldier's home community. After the authors decided to make an intensive analysis of AWOL cases, a special questionnaire was devised. This was given to 133 of the men who had been AWOL.

In order to evaluate the significance of the data obtained through the psychiatric examinations and the questionnaires, it was decided to compare them with findings in two control groups. The first control study consists of complete psychiatric examinations of men referred to the clinic during the

same period for behavior maladjustments other than AWOLism.<sup>2</sup> This is a heterogeneous group of cases including simple inaptitude, marked homesickness, alcoholism, homosexuality, enuresis, chronic somatic complaints without organic findings and a few psychotics. However, none of these individuals had been AWOL. The special questionnaire was given to so few of these men that the results have not been included in this paper.

The second control study was made on men who had completed their 17-weeks basic training at Fort Eustis and had neither been AWOL nor had they shown behavior deviations significant enough to warrant their being referred to the psychiatric consultation service. Those men all filled out the questionnaire and were given short psychiatric interviews confined to topics that had a particular bearing on the AWOL problem. These well-adjusted, "normal" trainees were carefully selected to match the AWOLs in regard to age, marital status, color, literacy and intelligence, as measured by the Army General Classification Test.<sup>3</sup>

A significant point developed by this study is that at Fort Eustis there is no difference in the AWOL rate between racial groups.

Color distribution	All Ft. Eustis trainees, percent	AWOLs, percent	Mal-adjusted, percent	Normals, percent
White ...	86	88	87	89
Negro ...	14	12	13	11

The AWOLs and the maladjusted generally come from lower levels on the Army General Classification Test scale than does the average soldier. (The control group called "normals" was set up to match the AWOLs in this respect.)

<sup>1</sup> They will hereafter be termed the "AWOLs." The great majority of these men were receiving their basic army training. Some were more experienced soldiers. Of this second group, nearly all were sent to Fort Eustis from another camp after they had been tried and their sentences had been suspended.

<sup>2</sup> These will hereafter be referred to as the "maladjusted."

<sup>3</sup> These men will hereafter be referred to as the "normals." We cannot emphasize too strongly that this group is not a cross section of Fort Eustis trainees as a whole, but a sample of adjusted soldiers matching AWOLs in certain basic respects.

Army general classification test score distribution	All Ft. Eustis trainees, percent	AWOLs, percent	Mal-adjusted, percent	Normals, percent
Group I and II (110 and over).....	41	10	16	9
Group III (90-109).....	27	20	23	22
Group IV (60-89).....	27	48	43	49
Group V and illiterate.....	5	22	18	20
Median point .....	103.4	76.2	82.6	78.4

The AWOLs are generally quite young, their median age point being 22.4 years. Only 25 percent of them are over 25 years of age, whereas 33 percent of all Fort Eustis trainees are over 25. But 38 percent of them are married, compared with an army-wide marriage figure of 30 percent. However, the sharpest point of difference is in regard to mental health.

Psychiatric diagnosis	AWOLs, percent	Mal-adjusted, percent
Psychopath * .....	34	15
Mental deficiency .....	10	8
Borderline intelligence .....	5	4
Neurotic personality † .....	6	24
Psychoneurosis .....	5	17
Chronic alcoholism .....	5	1
Organic nervous disease.....	1	2
Psychosis .....	1	2
No psychiatric condition.....	33	27

\* For the purposes of this paper it does not seem advisable to subdivide this group into the inadequate, alcoholic, schizoid, aggressive anti-social, etc., types. The last named type strongly predominates.

† This group is made up chiefly of the obsessional personalities and the immature dependent personalities.

What environmental factors are found that differentiate the three groups? The AWOLs seem to be significantly different from the other two groups with respect to the following:

Parents' marital status	AWOLs, percent	Mal-adjusted, percent	Normals, percent
Divorced .....	2	1	..
Separated .....	11	6	6
Marked discord .....	8	5	..
Unmarried .....	2	1	..
Dead (one or both before subject was 18).....	36	19	30
Happily married .....	41	68	64

Alcoholism—father	AWOLs, percent	Mal-adjusted, percent	Normals, percent
Heavy .....	36	20	17
Moderate .....	23	39	45
None .....	31	41	33
Not applicable .....	10	..	5

Alcoholism—brother	AWOLs, percent	Mal-adjusted, percent	Normals, percent
Heavy .....	35	14	12
Moderate .....	18	19	35
None .....	17	19	27
Not applicable .....	30	48	26

#### Criminal record

Father .....	26	8	6
Brother .....	32	19	10

Mental disease in immediate family * .....	32	62	6
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\* Of those questioned. (Only the members of the normal group were questioned routinely on this point.)

Differences between the three groups respecting medical histories are significant.

	AWOLs, percent	Mal-adjusted, percent	Normals, percent
Serious head injury.....	48	29	12
Venereal disease .....	26	21	9
Enuretic recently or currently .....	13	12	4
Enuretic through late childhood (13 years) .....	44	43	23

And social histories are likewise rather conclusively different:

	AWOLs, percent	Mal-adjusted, percent	Normals, percent
Job history			
Erratic .....	44	18	17
Fairly steady .....	38	63	28
Quite steady .....	17	19	45
Not applicable .....	1	..	10

#### Grades completed in school

6 or less .....	36	25	19
7-8 .....	35	27	38
9-10 .....	17	17	20
11-12 .....	10	23	21
Over 12 .....	2	8	2

Repeated grades .....	67	59	45
Truanted frequently .....	70	53	42
Criminal record (convictions other than traffic offenses) .....	54	15	12

#### Alcoholism—subject

Heavy .....	43	14	8
Moderate .....	47	55	57
None .....	10	31	35

#### Smoking—subject

Heavy (more than one pack of cigarettes a day) .....	44	18	10
Moderate .....	52	58	73
None .....	4	24	17

*Gambling—subject*

Heavy (or regular)....	36	12	9
Moderate (or occasional)....	27	30	36
None .....	37	58	55

*Church attendance (before induction)*

Regularly .....	28	56	56
Occasionally .....	21	33	37
Never .....	51	11	7

The pattern persists when the sexual experiences of these soldiers are analyzed—with the AWOLs showing a greater tendency toward excessive self-indulgence and heedlessness than the other two groups.

*Masturbation*

Indulged in as adult....	30	13	1
Indulged in as child—often .....	53	47	8
Indulged in as child—occasionally .....	10	11	81
No experience .....	7	29	10

*Age when heterosexual relations began*

Under 16 .....	46	14	29
16-17 .....	27	20	31
18-19 .....	12	13	12
20 and over.....	6	8	3
No experience .....	9	45	25

*Use of protectives*

Regular .....	24	31	36
Occasional .....	23	8	27
Never .....	43	10	12
Not applicable .....	10	51	25

A study of the frequently employed tests of nervous tension presents a mixed picture. The activity of the deep reflexes, the moistness of the palms and the pulse rate were found to be check points that did not differentiate AWOLs from the "Normals."

*Over-active reflexes*

AWOLs, per cent	Mal-adjusted, per cent	Normals, per cent
48	56	50
81	79	80

*Pulse rate*

80 or less.....	54	34	54
81-90 .....	24	29	21
91 or more.....	22	37	25

Tremulousness of outstretched fingers does appear to be a discriminating point, when consideration is given to only those having pronounced tremors.

	AWOLs, per cent	Mal-adjusted, per cent	Normals, per cent
Marked finger tremors....	38	10	5
Chronic nail biting.....	38	34	25
Markedly enlarged pupils..	40	41	21

The length of time a man can (or will) hold his breath on two or more trials is also found to be a discriminating test:

	AWOLs, per cent	Mal-adjusted, per cent	Normals, per cent
15 seconds or less.....	42	39	11
16-30 seconds .....	34	39	46
Over 30 seconds.....	24	22	43
Median point (in seconds). .	19.6	20.2	28.6

British observers have laid particular stress on the inability of the emotionally unstable, particularly cases of neurocirculatory asthenia, to hold the breath for a prolonged period. It is our feeling that this is as much, or perhaps more, a test of self discipline than an impersonal physiological phenomenon.

The senior author examined a group of specially picked men who had been nominated as potential officer candidates. Although 90 percent of these men were under sufficient tension to manifest sweating palms, their median point of breath holding was 60 seconds.

The remaining tables are based on a 45-question schedule administered anonymously to the "Normals" and 133 (a random selection) of the AWOLs.

Here we see that AWOLs neither write home nor hear from home as often as the "Normals," nor do they utilize recreational facilities at this station as much as the "Normals." They do not go in for outdoor games as much, nor were they "joiners" before entering the Army. They seem less well integrated as members of their home and military communities.

	AWOLs, percent	Normals, percent
<i>Hear from family (times a week)</i>		
5 or more.....	13	27
3-4 .....	16	34
1-2 .....	58	37
Less than 1, or 0.....	13	2
<i>Write to family (times a week)</i>		
5 or more.....	11	30
3-4 .....	24	30
1-2 .....	52	38
Less than 1, or 0.....	13	2
<i>Go to PX (nights a week)</i>		
5 or more.....	33	36
3-4 .....	30	43
1-2 .....	14	20
Less than 1, or 0.....	23	1
<i>Go to chapel (times a month)</i>		
5 or more.....	3	6
3-4 .....	18	38
1-2 .....	13	28
Less than 1, or 0.....	66	28
<i>Go to movies (times a month)</i>		
6 or more.....	26	35
3-5 .....	23	35
1-2 .....	18	22
Less than 1, or 0.....	33	8
<i>Go to service club (times a month)</i>		
6 or more.....	28	16
3-5 .....	22	33
1-2 .....	12	33
Less than 1, or 0.....	38	18
<i>Play outdoor games in spare time</i>		
Often .....	13	24
Sometimes .....	37	61
Never .....	50	15
<i>Organizations belonged to before entering the Army</i>		
1 or more (other than church or union) .....	18	45
Church or union only.....	13	17
None .....	69	38
<i>Use of week-end passes</i>		
Do use all available.....	81	66
* Do not use all available.....	19	34
* A clue as to why some men do not use every week-end pass obtainable is found in the fact that such men's homes are an average of $\frac{1}{2}$ hours more distant in traveling time than the homes of men who do use every pass they can get.		
<i>About how many hours is the normal traveling time between Fort Eustis and your home?</i>		
Up to 9 hours.....	17	27
10-12 .....	26	31
13-15 .....	11	13
16-18 .....	12	8
19 or more.....	34	21
Median distance (in hours).....	14.2	11.5

The fact that the homes of AWOLs are some three hours more distant, on the average, than those who have not gone AWOL, militates against acceptance of the frequently advanced theory that the training of men far from their homes would cut down the AWOL rate.

The next section of the schedule consisted of 7 general information questions, like "What nations are fighting on our side?", "When did the United States enter the war?", "Who is the head of the government of the United States, Russia, Germany . . . ?"

Under the scoring scale established for these questions, 55 was the highest possible score. Note then that the AWOLs, though a similar distribution to the "Normals" on the Army General Classification Test, fall far behind on this test.

General information score	AWOLs, percent	Normals, percent
Up to 20.....	48	27
21-30 .....	22	24
31-40 .....	17	25
41-55 .....	13	24

The schedule next contained 6 simple training information questions on general orders, foot drill, rifle fire and gas mask drill—with a total possible score of 30. Here too the AWOLs made a much poorer showing than the "Normals."

Training information score	AWOLs, percent	Normals, percent
Up to 15.....	70	23
16-20 .....	12	25
21-25 .....	11	32
26-30 .....	7	20

The succeeding 17 questions dealt with adjustment factors. These questions were weighted variously to produce a scoring range up to 100. As was to be expected, the AWOLs scored much lower on this adjustment scale than the "Normals."

Adjustment score	AWOLs, percent	Normals, percent
Up to 50.....	56	4
51-60 .....	20	8
61-70 .....	9	18
71-80 .....	9	35
81-100 .....	6	35

The comparative showing of the 2 groups on each of the 17 questions making up this adjustment scale is as follows:

	AWOLs, percent	Normals, percent
Percent considering Army food poor.	15	2
Percent thinking they get poor medical care .....	46	12
Percent believing they are treated unfairly .....	35	4
Percent believing others are treated unfairly .....	18	4
Percent believing they are liked by few or no other soldiers.....	30	2
Percent liking few or no other soldiers .....	29	3
Percent believing they have poor officers .....	33	4
Percent not wanting to become a non-commissioned officer .....	51	9
Percent thinking they have poor chances for a promotion.....	73	15
* Percent disliking antiaircraft as a service .....	47	10
Percent disliking the weapons on which they train.....	43	9
Percent disliking majority of basic training phases .....	29	8
Percent saying "All I want is to get out of the Army now".....	33	4
Percent saying "Don't like Army life at all".....	36	6
Percent saying, "Am certain I am proving to be a poor soldier"....	58	3
Percent saying they believe they are too nervous for combat.....	50	22
Percent saying "Don't want to go" (into combat) .....	27	9

\* Of the "Normals" who prefer another service, 58 percent vote for AAF; only 18 percent of the AWOLs vote for the AAF, their service choices being scattered very widely.

There was no difference of opinion between the two groups as to what are the 3 principal reasons for men going AWOL. But the AWOLs, in laying so much more stress on desire for women and for liquor as causes of AWOLism than the "Normals" give indication of their lack of self discipline. A third of them cite "Unfair treatment by superiors" as a cause, thereby giving additional confirmation of their inability to adjust to army life or to get along in society in general. "Not getting paid regularly" is an administrative malady of the confirmed AWOLer, so it is not surprising to see a fifth of the AWOLs mentioning this as an excuse for their AWOLism.

How many of these things do you think are important in making men go AWOL? *	AWOLs, percent	Normals, percent
Worry about conditions at home..	69	73
Homesickness .....	61	72
Not enough passes.....	44	47
Lack of women.....	38	26
Unfair treatment by superiors.....	32	24
Lack of hard liquor.....	31	12
Not getting paid regularly.....	22	3
Too near home.....	8	6
Work is too hard.....	7	5

\* Percentages add to more than 100 percent as most men checked more than one cause.

What would help curb AWOLism? Neither the AWOLs nor the "Normals" think certainty or severity of punishment is the answer, though the "Normals" tend to be more stern in this respect. Both vote heavily for "more passes," and both give second choice to more instruction on the seriousness of going AWOL.

How many of these things do you think would help keep men from going AWOL? *	AWOLs, percent	Normals, percent
More passes .....	74	64
More instruction about the seriousness of going AWOL.....	30	39
More athletics during spare time... 18	18	30
Knowing that they'd be sure to be punished .....	17	23
Tougher sentences .....	9	23
Other .....	29	15

\* Percentages add to more than 100 percent as many checked more than one answer.

These are a few of the AWOLs' comments on what they believe would be constructive in handling this problem:

"Trying to build morale of fellows who went AWOL instead of breaking it down."

"A little more things of enjoyment around this camp. A fellow gets tired of going to PXs and movies night after night."

"Better treatment in guardhouse and on details"

"Treat each equally. Don't give some furloughs and others none. Tell officers and non-coms to lead men instead of trying to drive them."

While neither group rates punishment very highly as a check upon AWOLism it must also be pointed out that first offenses among the AWOL recidivists<sup>4</sup> resulted in

<sup>4</sup> The entire group of AWOLs divide as follows in regard to number of offenses committed up to the time of this investigation:

Times AWOL	Percent
Once .....	44
2 times .....	24
3 times .....	14
4 or 5 times.....	9
6 or more times.....	9

surprisingly light punishment in most cases, as follows:

Punishment—1st AWOL offense	Recidivists, percent
None	5
Suspended	17
Battery punishment only	27
Fined only	12
1 week in guardhouse or less	4
2-4 weeks in guardhouse	8
1-2 months in guardhouse	12
2-3 months in guardhouse	6
3 months in guardhouse or more	9

With so many of these recidivists having had mild or no punishment for their first offense, there is reason to believe that a few would have been deterred from further AWOLism by more severe punishment. And certainty of punishment would perhaps prove to be an even stronger deterrent.

Basic to the whole problem, however, is the fact that many soldiers have no clear idea as to why AWOLism is regarded as a serious offense. Half of these "Normals" and three-fourths of the AWOLs show inadequate understanding in this regard.

AWOLs, percent	Normals, percent
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*Why does the Army not want men to go AWOL? (List all the reasons you can think of.)*

Said "Don't know".....	11	1
Answered illogically or inadequately.....	63	46
Answered adequately.....	11	18
Gave good or superior answer....	15	35

The civilian occupational distribution of the two groups is remarkably alike, except for the "student" and the "truck driver" categories.

AWOLs, percent	Normals, percent
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*Main civilian occupation*

Laborer—skilled and semi-skilled.....	39	33
Laborer—unskilled.....	21	20
Truck driver.....	21	11
Farmer.....	14	14
Clerical, professor, manager.....	4	7
Student.....	1	15

It seems significant that incidence of AWOLism among truck drivers is twice the normal expectancy. In examining those nomads of our gasoline age, one is often im-

pressed with their high degree of restlessness. It is frequently this outstanding characteristic which impels them to follow their occupation. It is also a very prominent personality characteristic of the AWOLer.

Finally, AWOLism occurs at any and all times during basic training and beyond; no especially critical point shows up in analysis of the date of the first offenses of these soldiers.

Weeks in Army before first going AWOL	Percent
1-2 weeks .....	6
3-4 weeks .....	12
5-6 weeks .....	10
7-8 weeks .....	12
9-12 weeks .....	14
13-16 weeks .....	11
17-20 weeks .....	8
Over 20 weeks.....	20
During basic (exact time unknown) ..	7

### CONCLUSIONS

A study of AWOL cases routinely referred to the psychiatric clinic attached to the headquarters staff of Fort Eustis leads to the following conclusions:

1. There was no difference in the rate of AWOLism between colored and white troops.
2. The intelligence level of the AWOL group as determined by the Army General Classification Test is very much lower than that of Fort Eustis as a whole.
3. There is a somewhat greater tendency for married men to go AWOL.
4. Most men who go AWOL are psychiatrically abnormal—only one-third were found to have no psychiatric condition.
5. One-third of the men who went AWOL were diagnosed as psychopaths.
6. In the AWOL group there is a high incidence of broken homes.
7. Alcoholism, criminalism and mental disorder mark the family background of these men.
8. A high percentage give a history of serious head injury, bed wetting and venereal infections.
9. A high percentage of men who go AWOL in the Army give a history of AWOLism while at school (marked truancy) and AWOLism at work (frequent quitting of jobs).

10. The great majority failed to complete grammar school and most of them had difficulty in passing.

11. Over half of the men who go AWOL in the Army have been previously convicted by civilian courts.

12. Over 40 percent of these men discipline themselves poorly as evidenced by an excessive use of alcohol and tobacco.

13. One-third are heavy gamblers.

14. A third practice adult autoerotism and all but a small percentage were excessively autoerotic in childhood.

15. Nearly one-half began heterosexual relations before the age of 16 and the same number failed to use prophylactic devices at any time.

16. More than one-third showed marked finger tremors, markedly enlarged pupils and evidence of chronic fingernail biting.

17. The men who go AWOL are far less dependent upon friends both in their home and military communities than are well adjusted soldiers.

18. Over two-thirds had never engaged in any organized group activity in civilian life and half participated in no type of spare time athletic events in camp.

19. Eighty percent of the men left camp at every legitimate opportunity afforded them.

20. On the average, the AWOLer's home was further from camp than that of the men who did not go AWOL.

21. Men who went AWOL scored much lower in tests of general information on the war and in tests of military knowledge than a group of soldiers of similar intelligence level who had not gone AWOL.

22. Men who go AWOL, almost without exception, are greatly dissatisfied with all phases of army life.

23. They have little liking for their fellow soldiers and feel themselves poorly regarded by them.

24. Three-fourths of the men who go AWOL (and a fairly large percentage of soldiers in general) do not know why the Army should consider going AWOL a serious breach of discipline.

25. Truck drivers have a special tendency to go AWOL.

26. There is no special period in a 17-week training cycle in which men elect to go AWOL.

#### DISCUSSION AND RECOMMENDATION

A high proportion of men who go AWOL in the Army were confirmed "AWOLers" before they entered the service. They come from the heedless, irresponsible part of the population that has so seriously failed to meet its social and communal responsibilities. The rigid demands of army discipline and the fact that soldiers are under constant observation makes the dereliction clear and obvious.

Going AWOL is so definite an evidence of maladjustment to the Army that every offender should be carefully studied by a psychiatrist. The handling of these men should be individualized and should in large measure be dependent upon the psychiatric findings.

The frankly insane and those who are markedly neurotic should be discharged from the service.

That large and difficult group of AWOLers—the psychopaths—must be dealt with realistically. They are the bad actors who have made so much difficulty for their families, their communities and themselves in civil life. They cannot be appealed to by ordinary persuasive reasoning or by the usual rewards and punishments. As workers in the field of psychiatry, we gravely doubt the wisdom of expending on them the time and energy involved in their training, because we do not believe that they can ever be depended upon. Military psychiatry is in great and immediate need of accurate reports on the adjustment of psychopaths in combat. But, with our present lack of knowledge, if trained they must be, it should be undertaken in a stockade.

Of the men who go AWOL, those who have no psychiatric condition—the mildly neurotic and those who are subnormal intellectually—should be handled altogether differently from the psychopaths. First of all, much preventive work can be done with these groups. From a morale point of view they are educable. They should be fully instructed in what AWOLism means to the Army and not merely told that it is forbidden. Their morale can be raised through education and by having such an individual soldier assigned to a job consistent with his

capabilities and civilian experience. The soldier who is satisfied at his military job and sold on the cause for which he is fighting will rarely go AWOL. Men cannot be satisfied who are constantly meeting frustrations. Attempts should not be made to force the intellectually subnormal man to learn to be a line soldier. He finally loses all hope and deserts. He should be trained to do army laboring work. The soldier who complains of physical symptoms must be dealt with patiently or he too will grow disgusted with the Army.

When those essentially normal soldiers go AWOL they should be punished. So far as practical, certainty and consistency in sentences should be aimed at. Guardhouses should have as their primary concern the up-building of inmates' morale rather than punishment and the crushing of spirit. Training should be continued there just as much as possible. Every guardhouse should be a center for rehabilitation. In many instances

literacy could be improved. Training manuals rather than comic books should be the literature readily available. As it is now, we deal with this problem almost as illogically as civilian courts deal with non-payment of alimony. A man fails to support his family so we put him in jail where he cannot possibly support it. A soldier interrupts his training by going AWOL so we put him in the guardhouse where he gets virtually no military training whatever.

When a man has been discharged from the guardhouse, he should be followed by an army social worker and helped to readjust himself—not by wet nursing but by intelligent guidance.

Some measure of AWOLism is inescapable, but firm and just treatment by commissioned and non-commissioned cadre, individualized attention to problem cases, and proper use of psychiatric consultative and therapeutic facilities will help keep it to the irreducible minimum.

# DELINQUENTS IN THE ARMY

## A STATISTICAL STUDY OF 500 REHABILITATION CENTER PRISONERS

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### INTRODUCTION

This article is a preliminary report of a statistical study of 500 soldiers whose delinquency while in the army resulted in their being sentenced to one of the army rehabilitation centers. The purpose of the report is to indicate the character of these delinquents as a group from the standpoint of 51 selected developmental and environmental factors. The relation of the present work to previous studies of delinquency can be understood from a knowledge of some of the selective factors which have characterized the group with which this study deals.

All of these cases are army general prisoners. The term "general prisoner" refers to soldiers who have been tried and convicted by a general court-martial for having violated one or more of the Articles of War. There is some tendency for general prisoners who are sent to rehabilitation centers to be the more chronic but less serious offenders among army delinquents. This selection occurs in part as a result of the army's tendency to avoid trying an offender by a general court-martial for his first offense unless the offense is of a serious nature. Further selection is made by army reviewing authorities in designating the place of confinement after conviction. The most serious offenders are as a rule not sent to rehabilitation centers but to one of the army's disciplinary barracks or to a Federal penitentiary.

Except for a few cases excluded because of incomplete information, the cases were chosen in regular sequence as they entered the rehabilitation center during the period of August, 1943, to February, 1944. So far as known, no selective influence has operated to make the group atypical as compared with the total population at the rehabilitation cen-

ter. It appears, therefore, that the group characteristics of these 500 men reflect accurately those of the rehabilitation center population as a whole. Of the group, 441 or 82.2 percent are white and 59 or 11.8 percent are colored.

The materials utilized in this study are contained in the comprehensive individual case histories prepared by the department of psychiatry and sociology for each inmate at the rehabilitation center. These histories incorporate materials gathered from many sources—reports from FBI and police departments; data from service and other army records; questionnaires answered by the prisoners' parents or guardians, relatives, friends, former teachers and employers and army associates; psychological tests; social histories from the American Red Cross; and interviews by the psychiatrist and by the psychologist.

The combined data were recorded on Hollerith cards and were analyzed by the writers as a part of their work as psychiatrist and psychologist in one of the army's rehabilitation centers.

### FINDINGS

A summary of the various developmental and environmental group characteristics of the 500 men studied is here presented under six general headings: I. Military adjustment, II. Civilian delinquency, III. Family background, IV. Educational and vocational background, V. Social background, VI. Psychiatric findings.

#### I. MILITARY ADJUSTMENT

**I. Offense for Which Sentenced.**—Classification of the offenses of the prisoners into logical categories would require some 25 or 30 subdivisions. A fairly accurate picture however of the offenses and their relative frequency can be seen from Table I.

<sup>1</sup> For invaluable assistance throughout the study, the writers acknowledge their indebtedness to Mrs. Nell LaGrone.

It was noted further that in 66.6 percent of the cases, the offense was of a military nature; that is, an offense in the army but one which would not be a violation of the law in civilian life. In 33.4 percent of the cases, the offense was civil as well as military. Also, in 35.2 percent of the cases, the prisoner was now confined for an offense for which he had previously been found guilty while in the army by summary or by special court-martial. Recidivism was found to be highest in cases of AWOL; in 91.3 percent of cases of recidivism, the offense was AWOL. In 15.3 percent of these cases, however, an offense which is also civilian is associated with AWOL. The next most

With respect to army efficiency rating usually obtained,<sup>2</sup> 2.0 percent received a rating of superior; 4.0 percent received excellent; 52.4 percent received satisfactory; 35.0 percent unsatisfactory; 4.2 percent inferior; and 2.4 percent never received a rating other than unknown.

The character ratings usually obtained by the prisoners were distributed as follows: 22.8 percent excellent; 17.8 percent very good; 21.0 percent good; 13.4 percent fair; 22.8 percent poor; and 22 percent never received a rating other than unknown. In the opinion of the prisoners' last company commanders, 24.4 percent were regarded as an "asset" to their last organization, 46.2 percent were regarded as a "hindrance," and 29.4 percent were either not indicated or regarded as neither an asset nor a hindrance.

3. *Method of Entering the Army.*—Slightly over one-half (52.2 percent) of the prisoners are men who voluntarily enlisted in the army; 6.4 percent entered active service as the result of being mobilized with the National Guard; 29.2 percent enlisted prior to December 7, 1941; 16.6 percent enlisted on or after December 7, 1941; and 47.8 percent were inducted through Selective Service. In 8.6 percent of the cases, the prisoners had been discharged, either honorably or otherwise, from active service with the army, navy, or marines, prior to their current enlistment in the army.

4. *Height, Weight, Age, and Length of Service in the Army.*—From an examination of the deciles and averages shown in Table II, the extent of the variability with respect to the age, height and weight of the prisoners and their length of service in the army can be seen. In Table II, column 1 shows the lower limit for each of the factors. Columns 2 through 10 show the first, second, third, fourth, fifth, sixth, seventh, eighth and ninth deciles, respectively, for each of the factors. Column 11 shows the upper limit for each of the factors, and column 12 shows the average (arithmetic mean) for each of the factors.

It can be seen from Table II that the youngest soldier at the time he committed

<sup>2</sup> Efficiency and character ratings were computed as an average of the various ratings received by each man prior to general court-martial.

TABLE I

## OFFENSES OF THE 500 ARMY DELINQUENTS ADMITTED TO THE REHABILITATION CENTER

	Per- centage
AWOL or desertion.....	28.6
AWOL associated with military offenses.....	18.6
AWOL associated with other than military offenses.....	8.8
Theft, larceny, burglary.....	17.5
Disobedience and insubordination.....	9.6
Embezzlement, bribery, forgery, hot checks.....	4.8
Asleep or drunk on post.....	3.2
Sexual offenses.....	2.0
Robbery or assault with intent to rob.....	1.0
Others.....	9.2

frequent type of recidivism is disobedience or insubordination which occurs in 7.3 percent of the cases.

2. *Rank and Ratings as Soldiers.*—The degree of success which the prisoners as a group achieved in adjusting themselves in the various branches of the army is here indicated by (1) the highest rank they attained, (2) their army efficiency rating, (3) their army character rating, and (4) the opinion of their last company commander.

Over one-half (59.4 percent) of the prisoners did not receive a promotion of any kind in the army; 15.4 percent at some time attained first-class private; 10.6 percent had held the rank of corporal or T/5; 8.2 percent had made sergeant or T/4; 4.0 percent had made staff sergeant or T/3; 0.6 percent had made technical sergeant; 1.0 percent had made master sergeant or first sergeant; and 0.8 percent had been aviation cadets.

the offense for which he was sent to the rehabilitation center was 17 years old (row 1, column 1). The oldest soldier was 49 (row 1, column 11), and the average age was 23.8 years (row 1, column 12). Since the fifth decile (fiftieth percentile or median) is 23 (row 1, column 6), it can be seen that one-half of the men were 23 years or younger and one-half were 23 years or older when they committed the offense. Likewise, it can be seen that 20 percent were 20 years or younger (row 1, column 3) and that 10 percent were 30 years or older (row 1, column 10).

5. *Delinquency and Disciplinary Treatment in the Army.*—Table III shows the upper and lower limits, the deciles, and the averages for factors related to delinquency and disciplinary treatment as explained for Table II. In about 40 percent<sup>3</sup> of the cases the general court-martial was the first the prisoner had received (row 1, column 5). That less than 40 percent of the group were in trouble for the first time, however, is indicated by row 2, column 4; only about 20 percent of the men had not been absent without leave prior to committing the offense for which sent to the rehabilitation center. The

TABLE II  
DECILES AND AVERAGES FOR FACTORS SHOWING AGE, HEIGHT, WEIGHT, AND LENGTH OF SERVICE IN THE ARMY FOR 500 ARMY DELINQUENTS ADMITTED TO THE REHABILITATION CENTER

Column:	1	2	3	4	5	6	7	8	9	10	11	12
	Decile: Lower limit	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	Upper	Avg.
1. Age at time prisoner committed offense for which he was sent to rehabilitation center .....	17	19	20	21	22	23	23	25	27	30	49	23.8
2. Age at current entrance in the army.	15	18	19	20	21	21	22	23	26	30	49	22.6
3. Height at current entrance in army.	60	66	67	68	68	69	69	70	71	72	78	68.8
4. Weight at current entrance in army.	110	130	135	141	146	150	155	160	170	178	221	152.9
5. Length of service prior to first offense for which court-martialed ("good time" given in months)...	1	2	3	4	5	6	8	12	16	21	49	9.4
6. Length of service ("good time") prior to present offense for which sent to rehabilitation center (in months) .....	1	3	5	7	9	12	16	19	24	29	73	14.3

It can be seen on row 2, column 1, that the youngest age at entrance in the army was 15, and the oldest was 49 (column 11); the average for the group was 22.6 years (column 12). Row 3, column 12, of Table II shows the average height of the prisoners is 68.8 inches, and row 4, column 12, shows the average weight is 152.9 pounds.

Row 6, column 12, of Table II shows that the men as a group have had more than a year of service (14.3 months) prior to committing the offense. Half of the men, however, had gotten into previous trouble for which they received a court-martial by the time they had been in the army 6 months (row 5, column 6). Actually the proportion of men who were in trouble within this period is much greater, since many men received company punishment for misconduct which, if continued, would result in trial by court-martial.

average man (median) had two courts-martial (row 1, column 6), had been AWOL 55 days (row 2, column 6), and had been in confinement 38 days (row 3, column 6) prior to his offense for which sent to the rehabilitation center. For this last offense, the average man (median) received a sentence of 2 years<sup>4</sup> (row 4, column 6); he had served 6 months "good time" in the army before he got his first court-martial (row 5, column 6) and had served 1 year

<sup>3</sup> This percent is actually somewhere between 40 and 50. Since the fourth decile is 1 and the fifth decile is 2, the exact percentile between 40 and 50 where the 1 would become 2 is not shown.

<sup>4</sup> Sentences by general courts-martial tend to be of an indeterminate character where the man is sent to a rehabilitation center. A recent report indicated that for men returned to active duty in the army from the rehabilitation center where this study was made, the average time actually served was approximately eight months.

"good time" in the army (row 6, column 6) before committing the offense for which he was sent to the rehabilitation center.

## II. CIVILIAN DELINQUENCY

1. *Civilian Arrests, Convictions, and Confinement.*—In Table IV is shown the upper and lower limits, deciles, and averages for factors relating to civilian arrests and convictions in the same manner as in Tables II and III. About 30 percent (actually 35.4 percent) of the men were not arrested in civilian life prior to entering the army; 60

correctional institutions as juveniles (18 years old or less), and 23.4 percent (row 8) as adults. Of these adults, the average length of time was 16.2 months (row 10, column 12).

2. *Development of Anti-Social Behavior.*—Arrests and convictions, though objective data, are not alone the best index of a developing history of criminal conduct. Prisoners' social histories often reveal persistent manifestations of anti-social behavior even though no arrests occurred. From this standpoint, only 23 percent of the group can

TABLE III

DECILES AND AVERAGES FOR FACTORS SHOWING DELINQUENCY AND DISCIPLINARY TREATMENT IN THE ARMY FOR 500 ARMY DELINQUENTS ADMITTED TO THE REHABILITATION CENTER

Column:	Decile:												Avg.
	Lower limit	1	2	3	4	5	6	7	8	9	10	11	12
1. Number of courts-martial including present one .....	1	1	1	1	1	2	2	2	3	4	9	20	2.0
2. Time AWOL prior to present court-martial (in days) .....	0	0	0	2	10	23	44	78	214	233	999	83.6	
3. Time AWOL prior to present court-martial excluding 140 (28.0 percent) men having no time AWOL (in days) .....	1	5	12	22	35	55	82	134	174	204	900	16.1	
4. Time in confinement (military) prior to present court-martial (in days) .....	0	0	0	7	24	38	53	78	127	191	577	70.4	
5. Time in confinement (military) prior to present court-martial excluding 144 (28.8 percent) men having no confinement (in days) .....	1	18	29	39	48	67	89	126	164	245	487	98.9	
6. Present sentence for which sent to rehabilitation center (in months) ..	6	12	12	15	24	24	36	60	60	60	120	35.5	

or more percent (row 1, column 5) had been arrested at least once, and 40 or more percent (row 1, column 7) had been arrested at least twice. Of the 64.6 percent (actual figure) having been arrested (row 2), the average number of arrests was 4.2 (row 2, column 12). Slightly over one-half (55.6 percent) of the men had not received any convictions for misdemeanors prior to entrance in the army (row 3); about 20 percent, however, (row 3) had received two or more convictions for misdemeanors. In 25.4 percent (row 5) the men had received one or more convictions for felonies, and of these (row 6), the average number of convictions was 2.0. As can be inferred from row 7, some of the men convicted received probation or suspended sentence since actually only 16.6 percent were confined in

be said to have become delinquent after coming into the army.

A breakdown showing the age at which the first persistent signs of antisocial behavior<sup>5</sup> occurred in the group of 500 prisoners in the rehabilitation center is shown in Table V.

Nearly one-half (42.8 percent) of the prisoners, as shown from a study of their social histories, had a definite pattern of delinquent behavior established by the time they reached 16 years of age. As was noted in Table II (row 2, column 4) 70 percent of the prisoners were 20 years or older at the

<sup>5</sup> For a discussion of the significance of this and other factors in the prediction of delinquency in the armed forces, see Schneider, A. J. N., LaGrone, C. W., Glueck, Sheldon, and Glueck, Eleanor, "Prediction of the Behavior of Civilian Delinquents in the Armed Forces," *Mental Hygiene*, July, 1944.

time of their current entrance in the army; in 60.4 percent, however, patterns of anti-social conduct had already become established by the time they reached the age of 20.

It is apparent that from the standpoint of arrests and convictions there is a substantial portion of the group who had never been in any trouble prior to entering the

army. In some of these cases, social histories clearly show persistent delinquent behavior although no arrests were made. There still remains, however, approximately one-fourth of the group who had not been in trouble prior to entering the army and whose histories showed nothing to indicate subsequent delinquency.

TABLE IV

DECILES AND AVERAGES FOR FACTORS SHOWING CIVILIAN DELINQUENCY OF 500 ARMY DELINQUENTS ADMITTED TO THE REHABILITATION CENTER

Decile:	Column:												Avg.
	1 Lower limit	2 1st	3 2nd	4 3rd	5 4th	6 5th	7 6th	8 7th	9 8th	10 9th	11 Upper		
1. Number of civilian arrests prior to entrance in the army.....	0	0	0	0	1	1	2	3	5	7	52	2.8	
2. Number of civilian arrests prior to entrance in army excluding 177 (35.4 percent) having had no arrests .....	1	1	1	2	2	3	4	5	6	10	52	4.2	
3. Number of convictions for misdemeanors prior to entrance in army .....	0	0	0	0	0	0	1	1	2	4	52	1.5	
4. Number of convictions for misdemeanors excluding 278 (55.6 percent) who had none.....	1	1	1	1	2	2	3	3	4	6	52	3.3	
5. Number of convictions for felonies prior to entrance in army.....	0	0	0	0	0	0	0	0	1	2	8	0.5	
6. Number of convictions for felonies excluding 373 (74.6 percent) who had none .....	1	1	1	1	1	1	2	2	3	4	8	2.0	
7. Time confined in correctional institutions as juvenile (18 years old or less) (in months).....	0	0	0	0	0	0	0	0	0	6	90	2.3	
8. Time confined in correctional institutions as juvenile excluding 417 (83.4 percent) who were not confined (in months).....	1	1	2	3	6	9	12	18	24	31	90	13.9	
9. Time confined in correctional institutions as adult (19 years old or more) (in months).....	0	0	0	0	0	0	0	0	1	12	99	3.8	
10. Time confined in correctional institutions as adult excluding 383 (76.6 percent) who were not confined (in months).....	1	1	1	3	6	10	12	18	24	37	99	16.2	

TABLE V

AGE AT WHICH FIRST PERSISTENT SIGNS OF ANTI-SOCIAL BEHAVIOR BECAME MANIFEST IN 500 ARMY DELINQUENTS ADMITTED TO THE REHABILITATION CENTER

	Per- centage
Age 10 and below.....	11.0
Ages 11 through 13.....	15.8
Ages 14 through 16.....	16.0
Ages 17 through 19.....	17.6
Ages 20 through 22.....	21.8
Ages 23 through 25.....	10.0
Age 26 and over.....	7.8

## III. FAMILY BACKGROUND

1. *Education of Parents or Parent Substitutes.*—A breakdown showing the education of the parents or parent substitutes of the prisoners is given in Table VI.

It is apparent that the parents or parent substitutes possessed a low level of formal education. In 74 percent neither parent had finished high school, and in only 6 percent of the cases had either of the parents been to college.

2. *Economic Condition of Family.*—En-

tirely objective criteria by which the economic condition of the family can be determined are difficult to derive. If by "comfortable" is meant that the family is sufficiently well-off to live several months without financial hardship even though income should be temporarily cut off, then it appears that in only 19.4 percent of the cases could the prisoners' families be regarded as comfortable; 42.6 percent could be regarded as marginal, and 38.0 percent as poor.

A more objective index of the economic condition of some of the prisoners' families

TABLE VI

EDUCATION OF PARENTS OR PARENT-SUBSTITUTES  
OF 500 ARMY DELINQUENTS ADMITTED TO  
THE REHABILITATION CENTER

	Per- centage
Both parents had less than 8th grade.....	33.0
One or both finished 8th grade.....	30.4
One or both had high school but did not finish.....	10.6
One or both finished high school.....	12.6
One or both had college but did not finish..	3.6
One or both finished college.....	2.4
Unknown .....	7.4

is the fact that in 40.0 percent, the family was known to have received relief at some time; 42.2 percent appear never to have received relief, and in 17.8 percent it was unknown whether the family received relief. Also in 30.8 percent, the mother or mother substitute worked outside the home in order to supplement the family income.

3. *Home Life.*—The type of home life of the prisoners for the majority of their lives up to age 18 is shown in Table VII.

With respect to the 65 percent shown as having lived with both or just one natural

parent, it was noted that in the case of slightly more than one-half (53.2 percent) the prisoners came from broken homes. Only 46.8 percent lived with both natural parents up to age 18. The break in the home resulted from the death of one parent in 25.4 percent of the cases; from the death of both parents in 1.2 percent; from parents separating in 11.4 percent; from divorce in 14.2 percent, and from absence due to imprisonment or illness (over one year) in 1.0 percent.

The home life of many prisoners, though not broken, exhibited one or more symptoms of inadequacy. In many cases, the home was

TABLE VII

TYPE OF HOME LIFE OF 500 ARMY DELINQUENTS  
ADMITTED TO THE REHABILITATION CENTER

	Per- centage
Lived with both or just one natural parent.	65.0
Stepparent prior to age 18.....	25.4
Reared in orphanage.....	1.6
Lived with relatives.....	7.2
Lived with foster parents.....	0.8

both broken and inadequate. In 88.2 percent of the cases the home was either broken, had one or more of the following symptoms of inadequacy, or was both: alcoholism 25.0 percent; extra-marital sex relations 8.2 percent; arrests of member of family 4.4 percent; frequent quarreling between members of family 19.0 percent, and mental disorders 10.0 percent.

Of the 53.2 percent of the prisoners whose homes were broken prior to age 18, the distribution giving age at the time of the first break is shown in row 1 of Table VIII. This distribution is indicated in terms of

TABLE VIII

AGE AT FIRST BREAK IN HOME FOR THOSE HAVING BROKEN HOMES AND NUMBER OF SIBLINGS FOR THE  
500 ARMY DELINQUENTS ADMITTED TO THE REHABILITATION CENTER

Column: Decile:	1 Lower limit	2 1st	3 2nd	4 3rd	5 4th	6 5th	7 6th	8 7th	9 8th	10 9th	11 Upper	12 Avg.
1. Age at first break in home excluding 234 cases (46.8 percent) whose homes were not broken.....	1	1	2	3	5	7	9	12	14	16	18	8.1
2. Number of living siblings excluding subject (34 or 7.8 percent were only children) .....	0	1	2	2	3	4	4	5	6	8	15	4.1
3. Number of dead siblings (271 or 54.2 per cent had no dead siblings)....	0	0	0	0	0	0	1	1	2	3	9	1.0

upper and lower limits, deciles, and averages in the same manner as in previous tables. Rows 2 and 3 of Table VIII give similar data concerning living and dead siblings, respectively, for the entire group of 500 army delinquents. As shown in row 2, column 6, the average (median) prisoner has 4 siblings living, and one-half of the group have a sibling who is deceased (row 3, column 6).

#### IV. EDUCATIONAL AND VOCATIONAL BACKGROUND

1. *Education and Age Began Work.*—Table IX shows the variations with respect to school grade completed, and the ages at which the prisoner quit school and began

army is shown in Table X. The majority (80.6 percent) were unskilled; <sup>6</sup> 15.0 percent could be regarded as semi-skilled, and 1.8 percent as skilled. Not many of the prisoners entered the army upon leaving school.

#### V. SOCIAL FACTORS

1. *Community Type.*—The types of communities in which the prisoners grew up are fairly evenly distributed; 27.2 percent were reared in rural communities (less than 500 population); 33.0 percent in small towns (500 to 25,000 population); and 39.8 percent in cities (over 25,000). Geographically the civilian environment of the prisoners represents a cross section of the nation.

2. *Marital Status.*—Slightly more than

TABLE IX  
DECILES AND AVERAGES FOR FACTORS SHOWING EDUCATION, AGE QUIT SCHOOL, AND AGE BEGAN WORK FOR 500 ARMY DELINQUENTS ADMITTED TO THE REHABILITATION CENTER

Decile:	Column:											
	1 Lower limit	2	3	4	5	6	7	8	9	10	11	12
1. School grade completed.....	1	4	6	7	8	8	9	9	10	12	16	8.0
2. Age quit school.....	8	14	15	15	16	16	17	17	18	26	15.8	
3. Age began work excluding 19 (3.8 percent) who never worked.....	10	14	15	15	16	16	17	17	18	26	16.2	

work. Of these three factors only the last needs clarifying. "Age began work" refers to the age at which the individual started on a wage-earning career in order to contribute to his or his family's support; the work need not have been full-time, but it does not refer to voluntary work done after school or on vacation.

It can be seen from row 1, column 5, that one-half of the prisoners completed the eighth grade; 60 percent were 16 years or less when they quit school (row 2, column 7), and over 80 percent (row 3, column 9) had started to work before they were 18 years old.

The prisoners' adjustment to school was as a group poor. Approximately one-half (49.4 percent) failed one or more grades; 31.4 percent were reported as frequent truants, and an additional 6.1 percent were considered by their school authorities as disciplinary problems.

2. *Type of Work and Occupational Skill.*—The distribution on the basis of the kind of work in civilian life prior to entering the

TABLE X  
PRINCIPAL CIVILIAN OCCUPATION OF 500 ARMY DELINQUENTS ADMITTED TO THE REHABILITATION CENTER

	Per- centage
Common labor .....	30.8
Agricultural worker .....	22.2
Industrial and factory worker .....	11.0
Truck and cab driver .....	9.4
White collar (sales, clerical) .....	9.2
Mechanical and building trades .....	6.6
Restaurant worker .....	3.0
Student .....	1.4
Others .....	4.0
None .....	2.4

one-half of the prisoners (53.0 percent) had never been married; 25.4 percent were now married; 6.0 percent were now married but had been previously divorced; 8.2 percent were divorced; 5.8 percent were separated;

<sup>6</sup> By unskilled is meant work that requires no training. Semi-skilled work involves the use of tools and processes that have to be learned over a period of several days to a few months. A skilled worker may require a year or more to learn the use of tools and processes required by his work.

1.4 percent had common-law wives;<sup>7</sup> and in 0.2 percent of the cases the wife was deceased.

3. *Church Preference.*—67.8 percent were Protestant, 25.2 percent Catholic, 0.6 percent Jewish; 4.8 percent had no church preference, and 1.6 percent were of miscellaneous faiths. While the proportion of Jewish men in the army as a whole is not known, the figure 0.6 percent suggests a disproportionately small number of army prisoners belonging to this faith.

#### VI. PSYCHIATRIC FINDINGS

1. *Emotional Disorders.*—Attempts to study emotional disorders objectively involve definite limitations. However, since these conditions are reported so frequently in the social histories, it was thought desirable at least to indicate in some quantitative way the nature and frequency of such disorders or symptoms among rehabilitation center prisoners.

A check list of seven disorders, or conditions symptomatic of emotional disorders, was adopted. The seven disorders were selected on the basis of (1) frequency, (2) their presumed importance, and (3) the greater objectivity in their determination.

The frequency of these seven disorders or behavior symptoms as exhibited by the prisoners is as follows: temper tantrums were present in 27.2 percent of the cases; enuresis (occurring after age six) in 21.2 percent; sleep disorders, such as frequent nightmares, walking in sleep, in 11.2 percent; speech disorders in 3.0 percent; homosexual perversions, including fellatio, in 14.0 percent; and none of these in 18.6 percent.

2. *Addictions.*—The classification of addictions is subject to essentially the same difficulties as is the classification of emotional disorders. What may appear to one investigator as an addiction of a certain kind or magnitude, may appear to another as something different. Necessarily, therefore, the following addictions are as they appear to the writers. For the group as a whole, mod-

erate alcoholism was present in 37.0 percent of the cases; severe alcoholism in 27.2 percent; pathological intoxication in 6.4 percent; marijuana in 5.6 percent; morphine in 0.8 percent, and none of these in 31.4 percent.

3. *Tattooing.*—Approximately one-fourth (23.4 percent) of the prisoners have tattooing on their bodies—in most cases in considerable amount. The frequency with which tattooing is associated with neuropsychiatric casualties in the army has been pointed out by other investigators. Tattooing is mentioned here as it seems to be found among prisoners with a frequency considerably greater than among unselected members of the army.

TABLE XI

#### INTELLIGENCE RATINGS OF 500 ARMY DELINQUENTS ADMITTED TO THE REHABILITATION CENTER

	Per- centage
Superior .....	2.4
Above average .....	24.8
Average .....	18.0
Below average .....	21.0
Dull normal .....	23.6
Borderline mentally deficient .....	6.4
Mentally deficient .....	3.8

4. *Intelligence.*—Based on psychometric test results and on interviews by the psychologist, the proportion of prisoners at various levels of intelligence is shown in Table XI.

A comparison of rehabilitation center prisoners with unselected members of the armed forces can be made from scores on the army general classification test in the absence of a control group. Table XII shows the ranges, deciles, and average for the rehabilitation center prisoners.

The average intelligence rating (column 12) is 90.3 which is presumed to be approximately 10 points lower than for the army as a whole. Somewhat over 60 percent (column 7) of the prisoners score below average on the test. About 20 percent (column 9) make scores which are substantially above the average for the army as a whole.

5. *Psychiatric Diagnosis.*—Based on a study of the social histories, incorporating the various materials already mentioned and supplemented by interviews by the psychia-

<sup>7</sup> This refers to instances in which the prisoner and his common-law wife regarded themselves as man and wife and does not include unions of a more or less temporary or clandestine nature.

trist, the distribution according to psychiatric diagnoses is given in Table XIII.

To define the various criteria upon which the above psychiatric diagnoses were made would add to their value as research data. Such definitions, however, could not be presented briefly nor would they eliminate the question of clinical judgment. The terms, "psychotic," "psychoneurotic," and "psychopathic personality," are used in the commonly accepted sense. The less commonly used diagnosis "simple adult maladjustment" is used to designate individuals of average stability, but who may manifest excessively emotionalized reactions to unusual stresses such as family or financial troubles. The individual recognizes that he is emotionally

which the present investigation deals. Some of these selective factors have been mentioned; others are easily inferred. Within the limits of the group studied, the following conclusions are drawn:

1. The majority of army delinquents were delinquent prior to entering the army. In about three-fourths of the cases, delinquency in the army seems to be either a continuation of prior delinquent patterns or to arise from predisposing conditions within the person which are simply evoked while in the army.
2. Approximately one-fourth of the group had not been in trouble prior to entering the army and their histories showed no indication that would point toward subsequent delinquency.

TABLE XII  
DECILES AND AVERAGES OF SCORES ON ARMY GENERAL CLASSIFICATION TEST OF 500 ARMY DELINQUENTS ADMITTED TO THE REHABILITATION CENTER

Score on army general classification test	Column Decile:	1	2	3	4	5	6	7	8	9	10	11	12
		Lower limit	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	Upper	Avg.
42	61	70	78	85	92	97	104	110	119	138	90.3		

TABLE XIII  
PSYCHIATRIC DIAGNOSES OF 500 ARMY DELINQUENTS ADMITTED TO THE REHABILITATION CENTER

	Per- centage
Psychosis	0.6
Psychoneurosis	22.0
Psychopathic personality	48.8
Simple adult maladjustment	23.6
Essentially normal	3.8
Others	1.2

upset, and he understands the reasons. The term, "essentially normal," though probably the most difficult of the terms used to define precisely, refers to those persons who appear emotionally stable, mature in their thinking, possess a sense of responsibility, and show no marked deviation in their sensitivity to social values. The designation "others" includes a variety of diagnoses, such as post-traumatic syndrome and epilepsy.

#### CONCLUSIONS

There are a number of selective factors which have operated in determining the group character of the army delinquents with

3. Most army delinquents are sent to the rehabilitation center for offenses of a military nature; and the military offense in which there is the greatest recidivism is AWOL.

4. Most army delinquents did not receive a promotion while in the army.

5. The rate of delinquency among members of the Regular Army and among men who volunteered appears to be higher than among men inducted through Selective Service.

6. Most army delinquents, though they became involved in misconduct in the first six months of service, had accumulated a total of one year or more "good time" in the army prior to being sent to the rehabilitation center.

7. The majority of army delinquents come from homes broken either by death, separation or divorce.

8. The family and social background of most army delinquents shows numerous disorganizing influences on the individual's development. Conditions such as alcoholism, arrests, mental disorders, quarreling, unsteady employment, and poverty prevail with high frequency.

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9. In the majority of army delinquents, neither parent nor parent-substitute went beyond the eighth grade in school.

10. The school adjustment of most army delinquents was poor. More than one-half did not complete the ninth grade; about one-half failed one or more grades, and approximately one-third were either truant or were disciplinary problems.

11. The majority of army delinquents are below average in intelligence.

12. Most army delinquents had begun working before they were 17 years old, and over one-half were either common or farm laborers.

13. The majority of army delinquents grew up in either rural communities or in towns of less than 25,000 population.

14. About one-half of the army delinquents have never been married.

15. Most army delinquents exhibited one or more rather serious emotional disorders as a child or adolescent.

16. Alcoholism and tattooing appear among army delinquents with high frequency.

17. From a psychiatric viewpoint, the majority of army delinquents exhibit definite disorders of personality.

## THE SEXUAL PSYCHOPATH IN THE MILITARY SERVICE (A STUDY OF 270 CASES)

LEWIS H. LOESER, LT. COL., M.C., A.U.S.

While the number of sexual offenders in the military service is small, it is generally agreed that they present administrative problems out of proportion to their actual numbers. There appears to be considerable disagreement in attitudes, criteria and disposition of these cases by those responsible. The following study is offered as an attempt to bring about more uniformity and greater understanding in this field.

This study is based upon experience with, and statistical data of 270 cases of sexual offenders who have been discharged from the 36th Station Hospital (NP) after varying periods of observation. Of this group 210 or 78% were, after careful study, diagnosed as true homosexuals; 60 or 22% were diagnosed administratively as "No disease," although accused of various types of sexual offenses.

The exigencies of the military situation have been such as to preclude certain aspects of research which would have been desirable. We were unable to perform biological and endocrine studies, owing to lack of critical materials and laboratory facilities. However the cases were, from the neuropsychiatric point of view, carefully studied and evaluated, and the data resulting therefrom should be of value.

### I. REASONS FOR HOSPITALIZATION

Of the total of 270 cases, 100 or 37% entered the hospital of their own volition and voluntarily disclosed their psychosexual disturbance to the medical officers. The greater number represented cases of homosexuals who were making efforts to control their sexual drives and in whom mounting tension and anxiety, or fear of being detected, led to voluntary hospitalization. A smaller number entered hospitals for other reasons and while convalescing decided to discuss their problems with the medical officer, or chaplain.

In view of the widespread notion that a large number of soldiers attempt to evade

military duties by claiming to be homosexuals, it is justifiable to point out that in the entire E.T.O. during the 18 months' period of February 1943 to August 1944, only 100 soldiers did so declare themselves, and that all of this group were, after careful study, considered to be true homosexuals by the staff of this hospital. Whether the problem of feigned homosexuality is serious elsewhere, or under other circumstances, is not known—certainly it is not a serious problem in this theater.

One hundred seventy cases, or 63% entered the hospital involuntarily for the following reasons: 116 were alleged or reported by others to have participated in homosexual activity, but were not seen in the act by witnesses; 34 were apprehended during a homosexual act, most often during fellatio; 8 were charged with exhibitionism; 5 were accused of sexual play with minors; 5 were accused of bestiality; 1 was charged with fetishism of perverse and unusual nature; 1 was alleged to be abnormally sadistic during sexual intercourse.

Homosexuality and incidents relating to homosexual practices thus constitute the greater proportion of the sexual psychopaths; 93% of all members of this group were either confirmed homosexuals or had indulged in homosexual practices on one or more occasion. Other forms of sexual perversion were relatively uncommon in this series.

The influence of the rôle of selection on statistical data is well illustrated by contrasting these figures with the data collected by Apfelberg, Sugar and Pfeffer(2). In their series of 250 sexual offenders examined at Bellevue Hospital, New York, 10% were homosexual, whereas pedophilia was seen in 30% and indecent exposure in 33% of their cases.

### 2. MEDICO-LEGAL STATUS

Twenty-five of the 210 true homosexuals were tried by general court-martial for

sodomy. The remainder (185) were evacuated to the Zone of the Interior for further disposition. No information is available at this time as to their ultimate disposition. Of the 60 cases diagnosed as "No disease" and not considered true homosexuals, all were under general court-martial charges for sodomy; the exact number tried is not known at this time.

The cases diagnosed as "No disease" were predominantly normal heterosexual individuals who were accused of homosexual behavior on a single occasion, usually while under the influence of alcohol. Apparently a single act of sodomy is considered a serious offense. The true homosexual who admitted repeated acts of sodomy was brought to trial infrequently, while the infrequent or first time offender was usually court-martialled. This has resulted in gross inequalities and apparent injustices on many occasions. In civil life this would be parallel to a situation wherein confirmed habitual criminals and repeated offenders are permitted to go free while single or first offenders are punished.

If sodomy is a punishable offense it should be so considered, whether committed by a homosexual or by a heterosexual individual, and all offenders should be held equally responsible. There is nothing about the homosexual drive which deprives the sufferer of ability to restrain his sexual actions. The homosexual differs from the heterosexual only in the *direction* of his sexual drive, and he may be expected and usually is able to control, restrain and guide his sexual behavior into socially acceptable channels. While the anti-social and unethical aspects of homosexual practices are obvious and in no way to be condoned, it is not believed that sodomy should be of itself a punishable offense, unless accompanied by coercion, directed toward a minor, or under circumstances which would disgrace the uniform. The sexual offender should be tried for the appropriate offense—impairing the morals of a minor, for example, but not for the act of sodomy. Considered coldly, without emotion or prejudice, the homosexual act is the natural sexual outlet for a numerically small group of otherwise normal people. Alone and by itself it is probably less dangerous to society than sexual promiscuity, adultery or prostitution. In this connection attention is called

to the fact that in most urban communities today, punitive action for homosexuality is becoming infrequent, and the medical and psychiatric aspects are receiving increasing attention.

### 3. AGE

No significant findings are noted in the age distribution—the grouping corresponds closely to the normal age distribution of army personnel.

### 4. RACE

Seven percent of the group are of the colored race. Colored admissions to this hospital have averaged about 10%. The rate of sexual offenders is less than expected and bears out the general impression that reported homosexuality is less common in the negro than in the white.

### 5. ENVIRONMENT

Sixteen percent come from rural homes, 63% from urban, and the remainder, 21%, have lived in both rural and urban communities. The predominance of sexual offenders from urban communities is noteworthy.

### 6. STATUS OF FAMILIES

Forty-one percent of the group come from broken homes. The family histories disclose a high proportion of divorces, separations and early deaths among the parents. The unusually high figure is considered to be significant in the psychopathology of the sexual deviant.

### 7. OCCUPATIONAL GROUPING

Of the 270 cases, only 6 would be placed in the unskilled group, and only 15 are classified as farmers. The remainder are in the skilled, technical, clerical or professional category. The distribution is as follows:

1. Unskilled .....	6
2. Semi-skilled (service) .....	100
3. Agriculture .....	15
4. Student .....	18
5. Clerical .....	46
6. Skilled (technicians) .....	38
7. Managers—salesmen .....	21
8. Executives .....	3
9. Professional .....	20
10. Others (unclassified) .....	3

The figures would thus indicate a preponderance of skilled trained personnel, and a relative infrequency of the unskilled in this group.

#### 8. MENTAL AGE (INTELLIGENCE)

Two hundred thirteen or 79% of this group were classified as normal adults by the psychiatric examiner. Of the remainder, 13 (or 5%) were estimated to have a mental age of 13 years (Binet), 13 (or 5%) of 12 years, 14 (or 5%) a mental age of 11, and 12 (or 4%) to be 10 years, or below. The figures are well above the average of the Army and would indicate that the sexual offender is predominantly a problem of normal intelligence and that mental deficiency plays an unimportant rôle in the Army in so far as sexual offenses are concerned.

#### 9. AGCT GROUPING

The figures obtained from a study of the AGCT ratings are significant, particularly in view of the preceding paragraph:

Classes I and II.....	118 (50%)	(110 or above)
Class III .....	63 (27%)	(90-109)
Class IV .....	30 (13%)	(70-89)
Class V .....	25 (10%)	(70 or below)
No information .....	33	

There were no illiterates in this series. The AGCT ratings would demonstrate a preponderance of the more intelligent and capable, a preponderance of considerable degree when compared to the average normal distribution of army personnel.

#### 10. EDUCATIONAL LEVEL

The educational level of the group is in keeping with the above scores: 232 (86%) had finished the 8th and 77 (54%) had graduated high school; 19 (11%) were college graduates.

#### 11. PERSONALITY

Evaluation of basic personality is, of necessity, based upon information obtained from the patient and is therefore highly subjective. On the basis of information available, the examiners characterized 81 (30%) of the group as highly introverted, 31 (or 11%) as being highly extraverted. Only 60 (22%)

were considered to be well balanced, well integrated personalities, the remainder, 98 (36%) were considered to have marked personality defects of various types.

#### 12. FAMILY HISTORY OF NEUROPSYCHIATRIC DISEASE

One hundred sixty-two (60%) gave no history of nervous or mental disease in the immediate family; 19 (7%) gave a history of one or more psychoses in the immediate family; 19 (7%) gave a family history of chronic alcoholism; 58 (21 1/2%) revealed definite neuroses in the immediate family. The significance of these figures is in doubt since reliable figures for the population as a whole are lacking.

#### 13. PREVIOUS NEUROPSYCHIATRIC HISTORY

One hundred thirty-eight (51%) gave no history of nervous or mental disease prior to admission to this hospital. Ninety-six (25%) disclosed the presence of neurotic symptoms of varying intensity but not of sufficient degree to require treatment. Of these the greater number (77) had conscious conflict over their homosexuality as the immediate cause of their neurotic symptoms. Thirty-two (12%) had definite neuroses sufficiently severe to warrant treatment prior to hospitalization. Of this group, homosexuality formed the basis for the neuroses in 25—only 7 had neuroses considered to be separate and distinct from the problem of homosexuality.

#### 14. MARITAL STATUS

As might be anticipated, a high percentage of this group—213 (79%)—have never married. Fifty-seven (21%) were married at one time but 9 were living apart from their wives at the time of entry into service, 10 were divorced and 3 were widowers. Of the 35 (13%) currently married, further investigation revealed highly unsatisfactory marital status in many instances. One is correct in stating that homosexuals occasionally marry, but that the marriages are unsatisfactory in a high percentage of cases and frequently end in divorce or separation.

#### 15. CONFLICT WITH THE LAW

Two hundred four (75%) denied any conflict with legal authorities prior to en-

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trance into the Army, 63 (23%) had minor entanglements and only 3 had served more than one 30-day sentence for any criminal act. The group as a whole would thus be classed as a law abiding group with little serious involvement with the authorities in civilian life.

#### 16. USE OF ALCOHOL

While only 5 (2%) were diagnosed as suffering from chronic alcoholism, 95 (35%) admitted excessive use of alcohol, and 125 (46%) were considered to be moderate drinkers. Only 45 (16%) were abstainers. The immoderate use of alcohol by homosexuals has been noted by other investigators. It is usually considered a secondary factor. The homosexual uses alcohol to release his inhibitions and to permit activities which are not socially acceptable. Alcohol is also used to relieve tension and anxiety of diverse sources.

#### 17. USE OF NARCOTICS

Narcotics appear to play an unimportant rôle in the life history of the sexual psychopath. Only 2 multiple addictions are recorded—7 cases of indulgence in marihuana are noted. Two hundred sixty-one (97%) denied the use of drugs at any time. In view of the important rôle of alcohol in this group, the absence of drug addiction is of interest.

#### 18. PREVIOUS ACCIDENTS AND ILLNESSES

The number of serious accidents and illnesses in this group is remarkably low, and the number of repeated or chronic accident cases is likewise low. Only one patient had three or more accidents in his record and 184 (68%) had no record of any serious accident or illness. As a group their health record is likewise impressive.

#### 19. VENEREAL DISEASE

Two hundred twenty-nine (85%) denied any history of venereal disease; 27 (10%) had gonorrhea at one time; 18 (6%) had had syphilis and 4 had had both gonorrhea and syphilis. The ratio of venereal disease is not high in contrast to figures of the Army as a whole, and in view of the known sexual promiscuity of the homosexual.

#### 20. OCCUPATIONAL HISTORY

Eighty-seven (32%) had, prior to entry into the Army, held more than three jobs. 182 (68%) had held three or less than three jobs—only 8 (5%) had never worked. The amount of job shifting, an accurate index of unreliability and a constant index of psychopathic trends, is less than that of the hospital population in general.

#### 21. MASCULINE-FEMININE RATIO

Of the 210 true homosexuals (male), 112 (53%) were considered after careful study to be masculine in make up and temperament and mannerisms, 98 (47%) were considered to be feminine. Of the 60 designated as "No disease" only 2 were characterized as being of feminine make up. These figures agree in general with other writers who report from 30 to 45% of male homosexuals to be distinctly feminine in personality traits.

#### 22. ASSOCIATED DISEASES

Secondary conditions of sufficient importance to be diagnosed at time of discharge include the following:

Disease	Cases
1. Constitutional psychopathic state.....	17
2. Syphilis .....	7
3. Psychoses .....	4*
4. Mental deficiency .....	4*
5. Injury .....	1
6. Epilepsy .....	1

\* Cause of admission in 3 cases.

The number of associated diseases in this group, except for the presence of constitutional psychopathic state and syphilis, is relatively low. Minor conditions have not been recorded.

#### 23. PREVIOUS COURTS-MARTIAL

Two hundred twenty-seven (84%) have had no courts-martial of any kind; 15 (5%) have had summary courts-martial on one occasion; 5 (2%) have had special courts-martial on one occasion; 16 (6%) have had more than one court-martial. Compared to the average of the hospital population, the number of violations of military law is low.

#### 24. RATINGS

Of enlisted men in the homosexual group, only 66 had never had a rating. The distribution of grades was as follows:

No rating .....	66
Private first class.....	31
Corporal .....	29
Sergeant .....	28
Staff sergeant .....	19
Technical sergeant .....	6
Master sergeant .....	10

The ratings average considerably higher than in the Army as a whole and would indicate that the group is superior in ability and technical skill to the average. Considerable talent in stenographic, musical, clerical and special service activities has been observed in this group. However the group is lacking in temperament and skills necessary to the combat soldier.

Much the same observation could be made of the officers in this group. Of 40 officers, only 5 were with combat troops, the remainder were with various types of service troops or in ground forces of Air Corps.

#### 25. THE RÔLE OF THE PSYCHIATRIST

War Department Circular No. 3, 3 January 1944, clearly defines the rôle of the psychiatrist in relation to the homosexual. It is the intent of the War Department that homosexuals be discharged from the service, or in the case of officers, be permitted to resign if they are not deemed reclaimable. Homosexuals are to be tried by court-martial when their misconduct has been aggravated by an independent offense such as the use of force or violence or commission of the act with a minor. Certain cases deemed reclaimable, including first offenders, those whose actions were conditioned by alcohol or drugs, or those who have acted under the undue influence of older or superior persons, may be returned to duty, but are not to be returned to their original units.

It is wise to insist that these cases be hospitalized for observation. Out-patient study is likely to be superficial and lead to errors of judgment. Careful histories, particularly of psychosexual development, and adequate physical, neurological and psychiatric examinations are necessary. The pa-

tient's behavior on the ward, his reaction to other homosexuals and his knowledge of the homosexual "lingo" often give valuable clues. At the end of the period of observation—usually 10 to 15 days—the psychiatrist attempts to answer the following questions:

1. Is the soldier sane and responsible?
2. What is the nature of his illness or disability?
3. Is he reclaimable to the service? Does he possess sufficient intelligence, morale, character and power of restraint to warrant a trial period by return to duty?
4. Has he committed an independent offense as defined by War Department Circular No. 3 Jan. '44?
5. Is further treatment or hospitalization indicated?
6. Will punishment be of value to the soldier or necessary for the good of the service?

In cases where charges have been or are to be filed, it should be understood that the psychiatrist plays an advisory rôle and that final disposition is left to the officer exercising general court-martial jurisdiction. In cases wherein no court-martial charges are filed, or where charges have been dropped, disposition is controlled by the commanding officer of the hospital, acting upon the recommendations of the disposition board. In all cases disposition should conform to the policy laid down in the circular referred to.

We have attempted to make our reports and board proceedings as complete and informative as possible. The completed proceedings consist of the report of the 35 c and disposition board and an abstract of the clinical record, carefully typed and signed by all members of the board and the commanding officer. The form used by the board, with alternative recommendations is stereotyped, but variations are permissible in certain cases.

Cases of confirmed sexual psychopaths, not deemed reclaimable, and not under court-martial jurisdiction are evacuated to the Zone of the Interior for further disposition. Section VIII proceedings are not carried out in this theater unless specific orders are received from higher headquarters to do so. In gen-

eral we have not attempted to obtain resignation of officers while in this theater unless so ordered by higher authority. Procedures of this type delay evacuation of patients and it is considered more practicable to obtain resignations of officers and to accomplish Section VIII discharges of enlisted men after arrival in the Zone of the Interior.

## 26. DIAGNOSIS

The diagnosis of homosexuality in a military hospital is based upon the following points:

1. *The Accompanying Statements, Records, Affidavits or Allegations.*—In general we have found the greater number of cases admitted with fairly complete documentary evidence. An occasional case is seen with insufficient history, in which case, attempts are made to contact the soldier's organization.
2. *This History Given by the Patient.*—The history of psychosexual development is of paramount importance. It is our opinion that the greater number of these cases give accurate, though not necessarily complete histories. The greatest difficulty arises in cases where court-martial charges are pending—here one frequently finds reluctance to reveal information which might be self-incriminating. It is in this group that inaccurate case histories are seen. The number of patients claiming to be homosexual who truly are not, is considered to be small.
3. *Behavior of the Patient While Under Observation.*—Homosexuals tend to group together and it is interesting to observe the speed and certainty with which they are able to recognize one another. Within a few hours after admission to the ward the homosexual will have located others of his type and becomes one of the group. They tend to stay grouped together and rarely include heterosexuals in their activities.
4. *Appearance and Mannerisms.*—About 47% of the homosexual group are distinctly feminine in appearance, mannerisms and movements. There is rarely any doubt in these cases for years of habit and training result in unmistakable earmarks of feminine traits. Movements, gait, voice and attitude are consistently feminine—there are seldom any half measures in the feminine type of male homosexual. The other 53% are, from outward appearances, misleading—they may vary from neutral to extreme pictures of masculinity.
5. *Homosexual Vocabulary.*—Most homosexuals, before they have gone very far in their career, pick up more or less of the extensive homosexual vocabulary. The psychiatrist should be familiar with the more commonly used terms and test each suspect. The presence or absence of awareness of these words is significant in most cases.
6. *Investigation of Dreams and Masturbation Phantasies.*—With good rapport between psychiatrist and patient, considerable understanding of the direction of the psychosexual drive can be obtained by the study of the content of dreams and of masturbation phantasies. The normal heterosexual rarely, if ever, phantasies homosexual activities. The homosexual will, on occasion, have dreams and phantasies of a heterosexual nature but these will be rare, his content being predominantly homosexual.
7. *Use of Narcohypnosis and "Truth Drugs."*—Under mild narcosis, consciously repressed material may be elicited, however it has been our experience that phantasy and untruths may also be produced and that reliable information is not necessarily forthcoming. The material so elicited must be carefully sifted and one cannot be certain that admissions produced under narcosis are valid.

The diagnosis, ultimately, rests upon clinical judgment, utilizing all available information derived from the above sources. In 90% of the cases the staff is usually in accord. In about 10% of the cases, chiefly in the group of offenders who deny complicity, there is occasional disagreement.

### 27. TERMINOLOGY

The writer has found the terms "active" and "passive" to be confusing and misleading. At times they are used to indicate aggressiveness or passivity in the rôle of soliciting or making advances. At other times these terms are used to indicate the masculine or feminine rôle respectively, in fellatio or anal intercourse. It would be more accurate and would avoid misunderstanding if the terms masculine or feminine rôle in fellatio (etc.) were to be used. The term "latent" is likewise used carelessly, often in lieu of the term "repressed" and seldom in its true reference to unconscious motivating drives.

### 28. ETIOLOGY

It is evident that diverse and multiple etiological factors are at work. A study of these factors reveals four main sub-groups of homosexuals:

1. Endocrine—or constitutional, determined by glandular dysfunction.
2. Psychological—or environmentally determined by factors at work during the formative stage of psychosexual development.
3. Regressive—the compulsive obsessional group who are blocked in normal heterosexual function by obsessional reactions of inadequacy and turn to homosexuality as an outlet.
4. Facultative—the psychopath group who may function either as homosexuals or heterosexuals, depending upon circumstances, surroundings and opportunity.

1. *Endocrine*.—These cases bear unmistakable evidence of the feminizing influence of hormone activity. Body build, fat deposit, hair distribution, voice, movements all bear testimony to the basic alteration of endocrine balance. All degrees of involvement are seen—some cases are near the borderline of the normal, though the greater number are quite distinct. Recent study of this phase by several investigators demonstrating abnormal amounts of female sex hormone in certain male homosexuals is confirmatory. About 30% of the homosexual group would appear to be distinctly of endocrine origin, or at least to have a basic endocrine disorder closely related to etiology.

2. *Psychological*.—This group, with normal endocrine status, presents histories of severe dislocation in the psychosexual field in early childhood. They include the male children brought up as females by mothers; the only son in a large family of females; the Oedipus situation with strong dislike of the father; and other similar mechanisms. Throughout this sub-group one can trace the influence of abnormal environment during the formative years of the child—the end result being a distortion of the sexual drive and failure of normal heterosexual development.

3. *Regressive (Compulsive-Obsessional)*.—This group, to a large extent is composed of heterosexuals whose normal sex activities are inhibited by fairly obvious blocking mechanisms. Most frequently seen is the patient with severe reactions of inadequacy in the sexual field based on masturbation guilt complexes. Fearful of failure in the presence of the female, they experiment and develop facilities in the homosexual field with partial satisfaction. This group is likely to manifest evidence of conflict and tension; their adjustment is rarely secure. Other inhibitory mechanisms are seen, the end result in each case being reactions of inadequacy in the heterosexual field and regression to a homosexual level. Strong compulsive and obsessional trends are seen in this group—they frequently are more properly diagnosed as compulsive obsessional neurotics with symptoms centering about the psychosexual field.

In civilian practice this group represents the only subdivision in which psychotherapy is of value. Insight and understanding, and the resulting gain in confidence, will result in resumption of heterosexual activity, although the underlying personality deviation is seldom altered.

4. *Facultative*.—This group can and does function on either a heterosexual or homosexual level, depending upon circumstances, surroundings, etc. The facultative homosexual is likely to be a psychopath whose libidinous drives are devoid of spiritual values. The orgasm however achieved, is the primary goal. This group frequently gives a history of exposure to homosexual experiences as young adults in gymnasiums, Turkish baths, while serving in the Navy.

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etc. It is the group most likely to resort to violence or coercion in order to obtain sexual outlets, the most unfit from the rehabilitation point of view, and the trouble makers in the military or hospital set-up. They are essentially psychopaths who achieve sexual orgasm in the most available manner, whether normal or perverse is of little import.

### 29. TREATMENT

Results are for the most part dependent upon the goals established. Treatment is of little value and there is little that medical science can offer at this time if the goal is to transform the homosexual to heterosexuality. While interesting and promising research is being conducted along endocrine lines, the results so far are of no proven therapeutic value.

Only the small number in the compulsive obsessional group (and they are not true homosexuals) can be offered any definite results by therapy. The psychiatrist however, can be of great value to the others if the goals are set within reasonable limits. The actual psychotherapeutic goals should be:

1. Overall adjustment of the homosexual:  
a. To his problem, b. To his family, c. Community, d. Occupation.

2. The treatment of the underlying neurosis. Very few homosexuals who do not have a neurosis will ask for or cooperate in treatment. It is the neurosis, the conflict within, and the symptoms thereof which usually motivate the desire for treatment. The homosexual without conflict, who has accepted his status without reactions of guilt or inferiority, is a well adjusted individual who does not require nor benefit from psychotherapy. I would estimate that roughly 50% belong in this category.

### 30. METHOD OF HANDLING

The practice of directing all cases of sexual psychopaths to special hospitals has been fully justified by our experience. The numerous medico-legal and administrative problems which surround these cases make them a difficult problem of management for the ordinary station or general hospital. At a center, where the personnel is familiar with

the problem, handling and management are facilitated.

### 31. UTILIZATION OF THE SEXUAL PSYCHOPATH IN THE MILITARY SERVICE

The writer feels that intelligent and calm study of the individual homosexual, followed by careful re-assignment would result in conservation of man power and salvaging of a large percentage of this group. The following recommendations would be made:

- a. The homosexual should not be subjected to punitive action unless his case is complicated by an independent offense, *i.e.*, coercion, physical violence or tampering with the morals of a minor. Punitive action does not cure or restrain the homosexual, nor does it act as a restraining influence on others.
- b. Homosexuals incapable of normal restraint, the mental defective and the inapt should be discharged from the service.
- c. Homosexuals capable of normal restraint, possessing normal talents and aptitude should be utilized by careful assignment. They will usually be found of most value in clerical work and do best in large metropolitan areas where sexual taboos and prejudices are less forceful.
- d. The question of deferment of the homosexual under the selective service should be reviewed. It is possible that careful study and individual handling might lead to increased utilization of this group.
- e. The policy of centralizing the hospitalization of the sexual psychopath is justified by the increased efficiency and facility in handling.

### SUMMARY

General characteristics of 270 sexual psychopaths, studied at the 36th Station Hospital (NP) are presented on a statistical basis. Outstanding features:

- a. The problem of sexual psychopathy in the military service is essentially that of homosexuality. Cases of other forms of sexual psychopathy are numerically infrequent.

- b. Feigning homosexual traits in order to avoid military obligations is not a serious problem in this theater. Careful study of 100 soldiers who applied for hospitalization revealed that practically all were true homosexuals.
- c. There has been lack of uniformity in medico-legal handling of these cases. There is considerable variation in attempting to decide which cases to try by court-martial, the severity of the sentences and the handling of clemency. In general, cases with single offenses, in men of good repute and honorable service, are more often prosecuted and receive more severe sentences than chronic offenders. Since the publication of War Department Circular No. 3, 3 January 1944, there has been more uniformity.
- d. There is less reported homosexuality among colored troops than white.
- e. The sexual psychopath is largely derived from urban areas.
- f. Broken homes form the background of 41% of the sexual psychopaths. This figure is unusually high and is of significance.
- g. Homosexuals are predominantly skilled and semi-skilled workers. Less than 2% are classified as unskilled.
- h. The average mental age of homosexuals is well above the average for the Army. Only 9% are below the 12 year level; 79% are normal or higher. More than 50% score above 110 in the army AGCT test. There were no illiterates in the entire group studied.
- i. The educational level was higher than in the Army in general; 86% had finished the 8th grade, 54% had graduated from high school.
- j. Forty percent of the group gave a history of psychoses, chronic alcoholism or neuroses in the immediate family.
- k. Neuroses were found present in 35% of the homosexual group, but were sufficiently disabling to require previous treatment in only 7%.
- l. Homosexuals are in general a law abiding group. Arrests for minor or serious offenses are infrequent.
- m. Homosexuals are likely to use alcohol to excess; 35% were considered excessive drinkers, only 16% were abstainers. However only 2% were considered chronic alcoholics.
- n. Drug addiction is infrequent among this group of sexual psychopaths.
- o. The accident and illness rate of the group is very low. Their health record is impressive.
- p. Fifteen percent of the homosexual group have had venereal diseases prior to or at their time of admission.
- q. Forty-seven percent of the male homosexuals were considered to be feminine in general appearance, make up and temperament.
- r. The group held higher ratings than the average of the Army: 10 master sergeants, 6 technical sergeants, 19 staff sergeants are among the list. Many ratings were based upon the possession of considerable talent in clerical, musical and dramatic ability.
- s. Temperament and skills necessary to the combat soldier were infrequently seen.

Recommendations based on the above conclusions are submitted. The author does not believe that sodomy *per se* should be a punishable offense, that discharge from the military is necessary for most cases, or that deferment in the draft is advisable in all known cases. A large percentage of homosexuals possess sufficient restraint and insight, and have sufficient talents to justify careful examination of the individual case.

The opinions contained herein are those of the writer and are not offered in any official capacity.

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## PSYCHIATRIC OBJECTIVES IN THE ARMY<sup>1</sup>

COLONEL WILLIAM C. MENNINGER, M. C.

*Director, Neuropsychiatry Consultants Division, Office of The Surgeon General,  
Washington, D. C.*

This is an auspicious occasion. This, the largest class to graduate from the School of Military Neuropsychiatry in its more than two years of operation will join some 900 other men now on the job, who have gone through this school. Under the authority and with the full support of The Surgeon General, this remarkable School of Military Neuropsychiatry, under the fine direction and tutelage of Colonel William Porter and his associates has graduated more students than any other of the military schools for medical officers. Your class swells this number to over 1000 men, now in neurology and psychiatry branches of the Army.

It is significant, extremely significant, that the War Department should have provided neuropsychiatric training for so large a group of men. About half of this number attended a refresher course but the remainder, over 500 men, compose a very important segment, a contribution to the Army, to the medical department and constitute a major event in the history of American psychiatry. This group represents a greater output and an introduction of more men into this field than all the medical schools combined have contributed in five years, perhaps even more. I hasten to add that those of us responsible for neuropsychiatry in the Army are under no illusions nor are your teachers here in the school. We hope and believe that many of you will perhaps continue in the field of psychiatry, and on the other hand, we are equally happy about those who, subsequent to their army experience, will return to some other field of medicine to apply the basic principles that you have learned in these three months.

### THE TRENDS OF PSYCHIATRY

With many inviting subjects to discuss, I want to talk to you about psychiatry from a

<sup>1</sup> Graduation Lecture, School of Military Neuropsychiatry, Mason General Hospital, 12 May 1945.

broad point of view. In so far as possible I should like to indicate the trends that we can see in the dynamics of the situation, the moving developments as they are discernable from my vantage point within the military organization. Much of my daily work, my daily concerns must necessarily treat with details and yet momentarily, I should like to step aside and look at the forest rather than the trees.

In considering the trends we must assume at least two basic considerations in our interpretation of these trends. The first of these basic considerations is the fact that psychiatry, for better or for worse, is receiving a tremendously increased interest. This is manifest on all sides by articles in magazines, in the newspapers, frequent references to psychiatry and psychiatric problems on the radio and in the movies. It is reliably reported that at least six pictures currently being made in Hollywood have a psychiatric tone or overtone. This interest is widely manifest in governmental agencies and it may be of interest to know that repeatedly we have had inquiries and requests for help from such agencies as the Office of War Information, the War Advertising Council; we have been asked to testify before Senate committees; we have had contacts with the Office of Strategic Services, the Office of Scientific Research and Development, the FBI, the Department of Agriculture, many contacts with the United States Public Health Service, and many other federal services. Among the civilian groups one might recite a long list representing communities, industry, civic organizations, labor, education, religion and others that have called upon the Neuropsychiatry Consultants Division of The Surgeon General's Office for advice and help and suggestions.

During the past three years, we have established contacts with almost every major division of the War Department, and it is with gratification that we have continued to merit

increasing respect, whether it is we who are seeking help or advice or whether the advice is requested of us. The evidence of increased interest in neuropsychiatry is extensive.

There are many reasons for this increased interest, the chief of which is the size of the problem with which we must wrestle. The percentage of rejections, the percentage of discharges from the Army, the number of battle casualties, the number of evacuations make all informed persons cognizant of the problem. These figures become a very justifiable reason why the War Department and the public are aware of and keenly interested in what psychiatry is doing and what it has to offer. This interest, while stimulating, is also a tremendous responsibility. This responsibility falls in part on your shoulders, since henceforth you will be regarded, in the Army at least, as psychiatrists. This widespread interest is a basic consideration in understanding present trends.

A second basic consideration in understanding the trends of psychiatry is a very frank word about those of us in this particular field of medicine. There is no doubt of the importance and the potential contribution of psychiatry. Its scientific content and findings are valid, solid, and have their applications in every field of human behavior. On the other hand, we must recognize that the interpretation, the specific application will depend very largely on the individual psychiatrist. And here, for better or for worse, we are not on such sure ground. Perhaps, because it is not a materialistic science, because it is not an exact science, it is subject to wide latitude of interpretation and application, and these of necessity must depend on the individual psychiatrist who is making these interpretations and applications. Those of us in responsible positions of determining the policy and practice of psychiatry in the Army are all too often reminded of these individual equations, these individual variations in our practice of psychiatry. Part of our job is to standardize the practice on as high a scientific level as possible, which in some cases requires further education of our psychiatrists. May I hastily add that we probably have no larger proportion of weak or inadequate or poor psychiatrists than surgery has surgeons or medicine has internists.

In all these fields the poor work of one individual reflects not alone on himself, but on the whole field in which he practices. Because psychiatry is so much in the limelight, any false move makes all of us pay dearly. Furthermore, the current widespread interest may lead certain of our enthusiastic confreres to oversell us—to lead people to expect more than we can deliver.

With these basic considerations in mind, I would like to point out what appear to be the chief trends, the chief emphases of psychiatry in our military situation; namely, its relation to manpower, its wider applications as a social science, the increased emphasis on treatment, and the psychiatric responsibility toward the veterans and their future.

The implications of psychiatry in the manpower situation, even as applied to the Army are numerous and broad; the problem of manpower has been a major one for the entire nation. The effective utilization of manpower within the Army has always been a major concern of the War Department. Even with the expert and elaborate classification and assignment program, no one denies that there is a certain percentage of manpower necessarily not in the most effective jobs. In so large an organization, certainly errors and mistakes will occur. A large Army must have a considerable number of men who will be found to be non-effective; men, who because of lack of motivation, because of personality or physical defects and because of many other reasons, contribute minimally or in some cases even detrimentally to the military effort. The specific application of psychiatry in these instances has been concerned with the disposition of these non-effective individuals. Regardless of the cause, the company or unit commander with even a little observation recognizes the man as a non-effective. He may try to help him, he may make every effort to utilize him, but for one reason or another the man does not or will not contribute. The officer does not like to classify him as a non-effective or to indicate on the man's service record that he is other than satisfactory, because if he does, such an indication mitigates against any subsequent transfer of that man out of his unit. The unfortunate result is that such a non-effective individual may be passed from unit

to unit to unit, although his service record will still indicate that he has had a satisfactory record. Sooner or later by reference he turns up as a patient in the medical department. Frequently, unless excluded by some specific organic defect, he finds his way into the hands of the neuropsychiatrist. Too often the neuropsychiatrist can find no psychiatric disease or illness and the man is returned to duty. He is still non-effective and sooner or later he is bounced back to the hospital. Again he may go through the same procedure and be returned to duty, only to be returned again to the hospital.

For many and varied reasons, a kind of solution resulted in the discharge of the man from the Army with some kind of medical diagnosis, almost always neuropsychiatric. To those of us responsible for the policies and practices of psychiatry in the Army, this procedure was extremely disturbing. It resulted in the abuse of our scientific judgment, or our terminology, and became in some degree of prostitution of the medical department. To meet this problem, following an extensive survey by the Inspector General, the Air Surgeon, and G-1 of the War Department, War Department Circular No. 81 was recently published, pointing out this abuse of medical channels in disposing of non-effective individuals. The content of this circular, which incidentally is restricted, indicated in very positive fashion that such non-effective individuals should not be discharged through medical channels. So long as the psychiatrist practices a scientific brand of medicine and bases his judgment as well as the disposition of the man on his scientific findings, neither the medical department nor psychiatry will be abused. In essence, if the man does not have a medical condition then he is no direct concern of the medical department.

A second major trend of psychiatry in the Army is in the application of its principles to the total social situation of the soldier rather than merely being a method of diagnosis or treatment. It is believed by many of us that the greatest contribution psychiatry might make would be in the field of prevention. The status of any individual in the Army in a sense is unique. He is a small part of a very large group which is broken down

into many smaller groups and he is more important in the smaller group. He becomes a member of a family, the platoon, the company, the battalion or the regiment. What he does, how he lives, how he thinks is determined by the purpose and goal of the entire unit. As an individual he becomes of secondary importance. The achievement of the goal of the unit, the family, is very directly related to the leadership of that unit, the father. Consequently, in our attempt to understand the individual, and in our attempt to help him, we must of necessity take into consideration the entire unit of its leadership. The unit becomes the important element rather than the individual since it is our aim to help that particular unit achieve its goal. In our civilian medical practice we were interested only in the individual. In the Army, we are interested in the company or the platoon and how the man fits into the teamwork of this company or platoon.

Psychiatry is concerned with the morale of the entire unit, its mental health which is indicated in the AWOL rate, the sick rate, the company punishment rate, the casualty rate. These, we have learned, are directly related to the mental health of the individual.

There are many opportunities for the social application of psychiatry within the Army. At the moment, one of our chief concerns is the effect of redeployment. It is not difficult to forecast the possible results, the possible manifestations of low morale and of mental ill health in the group that will return from the European Theater for a relatively short period and then be expected to move on to a new theater. We recognize that both the conscious and the unconscious of a great number of individuals will be mobilized towards excusing them from the job in front of all of us. It is reasonable to assume that one of the chief problems confronting the Army in this move will be the personality difficulties, the psychiatric problems occurring in the redeployed group.

For many months, we have been interested in the combat infantry soldier, and in providing psychiatric preventive measures to make him a more effective combat soldier for a longer period. There is evidence to believe that, in part at least through the efforts of the army psychiatrists, a consider-

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able number of our combat soldiers are being given a rest period in so far as strategy permits, rather than expecting them to fight on indefinitely as occurred earlier in the war. We have recently received word that combat replacements would be sent forward by platoons rather than as individuals as was originally necessary. This too may have been due partially to the efforts of the psychiatrists in the Army.

Although the British have used psychiatric examinations in officer selection for more than two years, only in a very recent report from one of our Armies in one of the theaters was the specific instruction from the commanding general that all officer candidates would receive a psychiatric evaluation before being sent to the officer candidate school. This order was a part of a memorandum relative to the psychiatric problems in that Army.

The third major trend in army psychiatry is the greatly increased emphasis placed on the treatment of psychiatric patients. Major changes have taken place in the attitude and the policy and the practice of psychiatric treatment in the last two years. Initially, psychiatrists were located only in the hospitals and their function was primarily the making of a diagnosis with the specific instruction to rapidly dispose of the man, almost always by discharge from the Army. Until only a few months ago, psychoneurotic patients were placed in general hospitals despite the fact that we have long known from civilian experience that psychoneuroses did not do well in hospitals and ordinarily were not treated there. The army policy and practice changed and convalescent hospitals were established in which these individuals could be placed in uniform, live in barracks, be away from the protected atmosphere of the general hospital environment.

Except for some relatively minor instructions, it is only 13 months ago that the first army directive was published relative to psychiatric treatment in the Army. During the last year tremendous strides have been made in the field of group therapy, in the development of activity programs, including occupation and recreation and education for psychiatric patients.

Initially, all psychotic patients were rapidly disposed of by discharge from the Army as

soon as possible to state and veterans hospitals. At the present time, an effective treatment program is in progress in specialized centers all over the Zone of the Interior. At present, at least five out of every six patients who had developed a psychosis are sufficiently recovered to return to their homes. At the same time, the attitude and practice have so markedly changed that those individuals with a negative history and with only a minor brief psychotic episode are in some instances returned for further duty rather than being discharged.

Perhaps more significant than these remarkable advances have been in the Zone of the Interior, is the gradually changing attitude relative to the treatment of the combat psychiatric casualty. The very splendid and outstanding work that has been accomplished in both the European Theater and the Southwest Pacific has brought great credit to psychiatry. These accomplishments, however, have been made against considerable odds. It is well recognized that psychiatric casualties do consistently occur but no special plan of organization was made prior to the war for the reclaiming them through treatment. This necessitated the development of special makeshift arrangements within each Army, developing a so-called exhaustion center out of a gas treatment battalion or out of a clearing company for the psychiatric treatment center. The psychiatrists, in such cases, were taken out of the evacuation hospital and attached to this special treatment unit. At the present time, those of us in The Surgeon General's Office are very greatly concerned with the development of some definite, planned organizations to take care of this problem in the future combat theater. It is our hope that we may set up psychiatric teams, comparable to the so-called auxiliary surgical teams to be attached to any unit to provide psychiatric treatment. It is our hope that we may set up special neuropsychiatric hospitals available to the Army, planned and designed to meet the neuropsychiatric problem.

This increased emphasis placed upon treatment is a source of much satisfaction and pride to those of us in this field. The treatment of the psychotic, the creation of the convalescent hospitals, the specific directive to provide maximum hospital benefit for

psychoneurotic patients, and the remarkable achievements of the psychiatrists with combat troops are all major progressive steps. One of the most brilliant chapters in psychiatry in this war is being written by the division psychiatrists and by the mental hygiene consultation psychiatrists—the former in every combat division, and the latter in every basic training camp in this country. All these developments have been made possible through the aggressive leadership and support of The Surgeon General and his entire staff.

The fourth and final major trend in army psychiatry is the growing concern for the discharged neuropsychiatric veteran. Fortunately, the Veterans Facilities stand by and have the major responsibility for this job, and yet the Army does feel a manifestly major interest in what happens to the considerable number of men who have been discharged from the Army because of mental disabilities. That this is no small number is common knowledge. Perhaps the fact that 98 percent of us in the Army are in reality only civilians in uniform for the emergency makes us feel the greater interest in this major problem of the home front. Our problems within the structure of the Army have been enormous—they have consumed time and overtime for all of us connected with psychiatry, and yet we have also had to spend considerable time planning for and advising in regard to the veterans. It has been a necessity because of the public demand.

Almost from the outset, the number of rejections at the induction centers for neuropsychiatric reasons called for explanations. The increasing number of men discharged for psychiatric reasons has called for more explanations. The result has been a well-trodden path to our little division in The Surgeon General's Office by writers from magazines and newspapers, from radio stations and motion-picture producers. Our Public Relations Officer has told me that except for the special drives, such as nurses recruitment, neuropsychiatry probably receives more newspaper column space, and he receives more inquiries about it than any other branch of The Surgeon General's Office. Undoubtedly, it is well that the public should be educated and you and I and every psychiatrist in the Army has the responsibility of helping along with this in

every way that we can. Its success or failure vitally affects those men who have been our soldiers, and, perhaps more important, it vitally affects the total home front situation which include your family and mine, and eventually you and me.

#### RECOMMENDATIONS

In presenting these trends of psychiatry, it has been my aim to point out to you what we are and wish to emphasize in psychiatry as we practice it in the Army. We wish to stress and implement prevention. We are anxious to further perfect, develop and intensify psychiatric treatment. We feel that it is imperative that all of us assume a major responsibility for psychiatric education, education of our patients, of our medical confreres in other fields, of line officers, and of the public. All of these will be your responsibility. Having indicated these important points to you, I want to close with some brief suggestions, perhaps some bits of advice to you who for the most part are about to begin your psychiatric career even though it may be limited only to the Army.

1. It will be wise if you can keep in mind that you are just starting, that you have some limitations, and recognizing these keep your nose to the grindstone to learn and study all that you can. As you well know to qualify for the American Board, one must have had five years of experience. You have had three months, and yet from now on you are going to be regarded as psychiatrists—you are going to be called psychiatrists—and, in so far as we can direct, you are going to be doing psychiatric work.

We have no assurance that the setup in which you may find yourself will be particularly conducive to study and to further growth, yet we hope you will have sufficient incentive to continue the growth on your own, if necessary. We hope that in each place there will be something of the teaching hospital atmosphere, of seminars, of journal clubs, of staff meetings. If these are available, join them wholeheartedly. You may have on an army uniform, but fundamentally you are working for yourself.

2. Accept the fact that you are in the Army—as philosophically as you can. It is not necessary to tell you that it is not the

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first preference of most of us. On the other hand we know we have a tremendous challenge, a great opportunity, and now it's part yours. You have the responsibility of being both a military officer and a doctor. The chances are that most of us civilian physicians will never be very G.I. Our major contribution is in the field of medicine. What we may lack in our G.I. qualities, we certainly can and should and must make up in our scientific abilities as doctors.

3. Keep your sights high. It is all too easy to fall into the rut. There are unlimited possibilities. You will not lack clinical material to permit you to learn, to grow, to do research in the Army. But you cannot, if you feel you have to close shop on the dot of 4:30 in the afternoon to make the carpool home. In civilian life, you will never attend medical meetings in the daytime except at conventions. Consequently, just because you have come into the Army do not assume that you must have time out of your duty hours to attend conferences or seminars or journal clubs. Find some special little problems that you are interested in. Enlist your chief's help to work on these. Keep your own records of interesting cases. Develop your own reprint library. The sky's the limit and your chief handicaps will be within yourself.

4. Don't oversell yourself or your subject. Enthusiasm is a great quality, but if it leads you to overestimate yourself or if it leads you to have other people overestimate you, it sooner or later defeats you. Particularly is this true for us in the field of psychiatry in the Army. We cannot expect to return every man to duty, and on the other hand we cannot permit a man to go home just because he wants to. What you may do, what you

may accomplish, reflects not only on yourself, but on the hospital or the unit with which you are associated; it will reflect on Colonel Porter and the school; it will reflect on the medical department of the Army, and it will reflect on psychiatry. It is to be hoped that your reflections will all be favorable.

5. It is well to recognize that your road will not be smooth. You are entering a field in which there are probably more misconceptions, and less adequate understanding than in any other field in medicine and doctors hold these misconceptions sometimes more tenaciously than laymen. Fortunately for most of you, you come into the field without these prejudices. You come in without many of these misconceptions. You may little recognize the isolation in which psychiatry has existed for too many years. But again, fortunately you find a fertile soil within the Army. You will find psychiatry working hand in hand with medicine and surgery, a closer relationship than exists in almost any of our civilian hospitals. Maintain and develop these contacts and relationships. Make it a practice to go on regular rounds on medicine or surgery. Keep up your skill with the electrocardiograph, as well as the electroencephalograph.

In closing, my admonition to you is to be a doctor first, last and always. As the occasion demands be the best psychiatrist or neurologist you can be. Be the best army officer you know how to be but never sacrifice your physician-patient relationship. Make it your aim to maintain and grow in your scientific attitude and knowledge. May you all make it your immediate goal to practice a practical, helpful, scientific psychiatry and neurology.

DELAYED ACTION OF INSULIN IN SCHIZOPHRENIA<sup>1</sup>CAPTAIN F. J. BRACELAND,<sup>2</sup> M.D., L. J. MEDUNA,<sup>3</sup> M.D., AND  
J. A. VAICHULIS,<sup>4</sup> PH.D.

Horvath and Friedman, using 0.05 unit of insulin per kg. of body weight, intravenously administered, found that three out of four schizophrenic patients exhibited a delayed response to intravenous insulin. This was demonstrated by a 35 minute period elapsing before the lowest level was observed, instead of an average of 28 minutes observed in college students. In addition, the return of the blood sugar to basal value was considerably delayed in schizophrenics. The blood sugar of the fourth patient was not appreciably altered by the presence of exogenous insulin.

Freeman and his collaborators, using intravenously 0.1 unit of insulin per kg. of body weight, tested 49 schizophrenic patients. "A half hour after the injection of insulin, the mean for the normal subjects decreased to a level of 29.6 mg. per 100 cc., while the corresponding value for the patients was 39.2 mg. per 100 cc." and "41% of the patients showed greater resistiveness to insulin than did any of the normal subjects." The work of the present authors confirms these results.

Fig. 1 shows a composite curve of 29 schizophrenic cases and that of twenty-five normals. In the case of normals, the curve arrives at its nadir at the thirty-minute value, which was without exception a loss of more than 50% of the fasting value. The nadir of the curve in schizophrenic cases is 5 minutes later and it is less than 35% of the fasting value. These discrepancies exist between the individual curves, as well as between the averages.

It is probable that this resistance to insulin can be explained by the presence of an anti-insulin factor which Meduna, Gerty and

Urse have demonstrated in the blood of schizophrenics. They found, in about 60% of their cases, that the patient's blood injected into rabbits diminished the fall in blood sugar induced by subsequent injection of insulin. This has been corroborated by M. Harris.

Were resistance to insulin the only deviation in these patients, they would have a decreased glucose tolerance and a high fast-

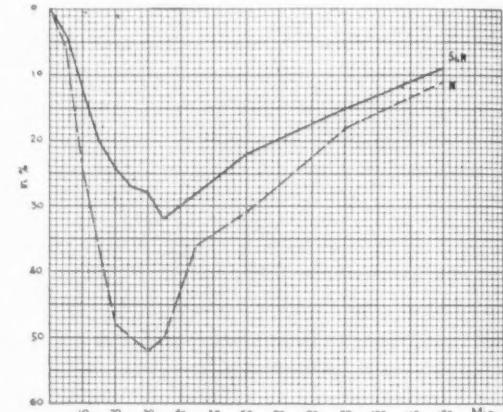


FIG. 1.—Average curves of schizophrenic patients and normal subjects during insulin tolerance test. Even line is an average of 29 acute schizophrenic cases; broken line is an average curve of 25 normals of the same age range. All values are expressed in per cents of the fasting blood sugar.

ing blood sugar. The latter does not occur. Determinations by the Hagedorn-Jensen method in venous blood of 247 schizophrenics showed an abnormally wide distribution—29% were hypoglycemic—and the highest were only at the upper limit of normals. These fasting blood sugar values indicate that we are not dealing with a simple resistance to insulin.

Ordinary sugar tolerance tests throw some light on the complexities of this problem. Appel and Hughes, Farr, Raphael and Powers, Lorenz, Smith and Hill, Bowman, Solomon, Katzenelbogen, and other investigators, all have reported sugar tolerance curves of the sustained type in schizo-

<sup>1</sup> Read at the Centenary Meeting of The American Psychiatric Association, Philadelphia, Pa., May 15-18, 1944.

<sup>2</sup> Dean of Loyola Medical School, U. S. Navy.

<sup>3</sup> Associate Professor of Psychiatry, University of Illinois, at the Illinois Neuropsychiatric Institute.

<sup>4</sup> Associate in Pharmacology, Loyola Medical School.

phrenics. This, again, we can confirm. These reports are suggestive, but seem to be ambiguous. They led us to seek a more

preceding diet. A second advantage of Exton's test is that it rules out possible errors due to delayed gastric absorption.

TABLE I  
BLOOD SUGAR OF SCHIZOPHRENICS IN EXTON'S TEST

A. Normal responses			B. Flat responses			C. Diabetic-like responses		
Fasting sample	30' sample	60' sample	Fasting sample	30' sample	60' sample	Fasting sample	30' sample	60' sample
82	145	145	68	92	48	72	155	178
88	124	80	90	111	101	69	158	169
78	138	145	95	98	93	97	178	192
95	155	132	105	115	105	85	158	240
86	135	140	92	98	103	85	155	190
70	140	150	70	76	68	95	175	192
83	135	98	85	102	82	76	139	152
75	113	115	75	95	65	88	83	127
65	113	75	98	108	68	76	119	152
70	120	75	52	84	57	86	141	188
88	126	113	86	112	95	80	119	142
75	148	150	74	95	99	72	74	80
90	148	132	74	110	105	92	155	166
75	111	115	65	92	88	87	122	192
105	150	145	95	76	93	76	139	154
100	132	120	68	92	45	72	97	126
80	134	115				86	108	138
82	114	95				86	102	121
98	115	102				85	113	145
98	133	75				108	124	137
73	121	96				133	139	192
53	119	115				82	132	184
60	104	93				57	95	117
75	115	109				57	95	117
84	158	103				71	94	154
81	133	129				75	123	159
92	146	136				90	124	146
80	140	132				87	148	180
93	123	123				99	117	128
95	147	149				75	111	155
87	109	87				92	130	152
67	105	105				92	159	182
79	114	120				92	158	168
111	178	178				112	125	153
85	128	135				100	124	135
75	123	132				98	153	182
89	165	89				81	119	146
						93	131	151
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						88	125	169
						78	105	120
						80	131	162
						92	131	169
						90	110	128
						88	119	130
						92	105	125
						78	105	135
						89	96	110
						82	140	161

decisive test. We have tried Exton's 2 dose-1 hour test. One advantage of this test, according to E. Wayburn and H. Gray, is that the results are relatively uninfluenced by the

In normal individuals, the first half of the sugar produces a marked rise in the blood sugar at the end of the first half hour, whereas, the second half fails to produce a

rise of more than 5 mgm.% and more frequently there is a fall in the blood sugar at the end of the second half hour. In cases of liver disease, diabetes and pituitary tumor, the second dose of sugar produces a rise more than 10 mgm.% at the end of the second half hour. We examined 102 schizophrenic cases. The patients were on an average state hospital diet of roughly 2000 calories daily. About 1100 calories were supplied by carbohydrates. We excluded from the test catatonics who required tube-feeding. The urine of the patients was examined for evidences of sugar in every case at the end of the test. We found traces of sugar in only one instance.

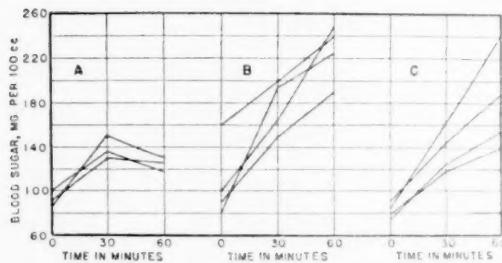


FIG. 2.—Exton-Rose two dose-one hour glucose tolerance test. A. shows three average normal subjects' Exton-Rose curves; B., four diabetic cases; C., four schizophrenic cases.

Twenty-one of the tested schizophrenics received insulin or electric shock therapy, but none within a year prior to the test. The treated cases showed no deviation from the group as a whole. Eight of the 21 cases treated previously showed normal (negative) Exton's test and 13 were positive. This is approximately the same proportion as in the untreated cases. Only 37 cases of the 102 tested had normal curves. The majority (65 curves), were definitely abnormal; 16 were flat or descending, perhaps indicating overactivity of the vago-insular system; 49 showed an abnormal rise during the second half hour.

We are here concerned with the continuously ascending curves. These are seen in diabetes mellitus, liver disease and in hyperpituitarism (tumor) as well as in schizophrenia.

Inefficiency of the liver function cannot be ruled out. As a matter of fact, the weight

of the schizophrenic liver is said to be about 30% less than normal. It is permissible to infer that the delayed action of insulin may be due to a decreased capacity of the liver to handle larger amounts of glucose given in an unusual way. The weakness of the hypothesis is that it does not explain the increased anti-insulin factor in the schizophrenic's blood.

Diabetes mellitus due to lack of insulin is ruled out by the low fasting blood sugar and by the normal or subnormal rise during the first half hour, as well as by the lack of sugar excretion in the urine at the end of the second half hour.

Since Soskin was able to demonstrate a normal glucose tolerance curve in the pancreatectomized animal, maintained on constant glucose and insulin infusion, it would be difficult to maintain that these schizophrenics' continuously rising curves were due simply to failure to secrete additional insulin. Hence, we are forced to the conclusion that insulin, though present, failed to work within the time in question. It cannot be said that its action was ultimately blocked, or we would have found the high fasting blood sugar seen in diabetes in association with the same continuously rising curve. The only remaining alternative is that the action of the insulin was markedly delayed. The evidence, to date, seems to indicate that the delay in the action of insulin in these schizophrenic patients can be attributed to the anti-insulin factor already demonstrated in their blood.

We tried to find out whether these diabetic-like sugar tolerance curves were related to any particular form or phase of schizophrenia. This part of the work was begun by Braceland, who was called to military duty before it was completed. We can summarize his observations on the continuously ascending curve thus:

1. It is not related to the fasting blood sugar level.
2. It is not confined to any particular type—hebephrenic, catatonic or paranoid.
3. It is most frequently found when the schizophrenia is acute or still in process—not when it has burned out as in the chronic backward state hospital patients.

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## OBSERVATIONS ON THE PRIVATE PRACTICE OF PSYCHIATRY

WENDELL MUNCIE, M. D.

In the morning mail came the announcement from an old friend of the opening of his office for the private practice of psychiatry. This delighted me, for a man with an enviable record in research and with an unusual background in psychiatry and philosophy was joining the ranks of those who are devoting themselves to the care of patients.

I will quickly pass over the limitless pleasure awaiting him in practice, the agreeable challenge to constructive effort inherent in the patient-physician relationship, the day-to-day trial of old and trusted concepts of psychopathology, the details of organization of even the most modest office, the financial problems and rewards. These constitute the daily grist of the private practitioner's life. They are their own sufficient rewards to the mature man, well trained but no slave to his training, and eager to test theory with practice.

I am concerned here with a frank appraisal of his difficulties with which he will quickly be confronted. He will discover that his training has never in the slightest degree prepared him for these rather ugly facts, and that no means exist for applying concerted effort toward their solution. In that excellent volume, "A Hundred Years of Psychiatry," published last year on the centennial anniversary of The American Psychiatric Association he will find no reference to the growth of the private practice of psychiatry in these United States. He will search the files of the programs of past meetings of the Association and of other psychiatric societies with the meagerest return for his efforts. In short, he will discover that he has joined the ranks of the happy, and forgotten men. That happiness should have as its inevitable companion mental and professional isolation will seem the more queer to him as his experience deepens, and he becomes more aware of the limitations to his previous "erudition." He will perhaps be profoundly disturbed at the violence he had done to the facts of experience in his teaching demonstrations to students; or at the remoteness and ultra-refine-

ment of the problems of "research" in which he had excelled. In short, he will have added measurable cubits to his stature, his overall wisdom and skill, but almost certainly this will performe remain a matter to be cherished in secret, shared only with those who will profit most directly from it: his patients.

He will discover some very serious limitations to his effectiveness, namely:

1. Almost certainly he will not have "hospital privileges" for his patients in the well established psychiatric hospitals. These are almost without exception "closed" institutions, which may or may not choose to accept his patients as their own, should they need even the most transient hospital care.

In no other branch of medicine does this hold. The high level of medicine and surgery in this country depends not only on the adequate training of practitioners, but in the general availability of excellent hospital facilities. Try to imagine the state of surgery if every practicing surgeon automatically were forced to turn over to a closed surgical institution his patients who could not be handled by office procedure.

The inequities of this situation are apparent. Not infrequently patients resist hospitalization because this means an unwelcome and unnecessary change in professional care, the needless reiteration of history, the waste of time in establishing new contacts. It is almost certain that remote control of the treatment of patients through the usual teaching-hospital training hierarchy offers no professional advantage over the unbroken attendance of the experienced practitioner.

It goes without saying that sometimes such a complete change is desirable. The practitioner should recognize this as well as the reverse situation.

2. Failing to find admission for his patients in closed psychiatric hospitals the practitioner may attempt treatment on the wards of a general hospital. He will find that this is a method wasteful of his own time, the patient's money, and even when successful producing, at prodigious cost in effort and

money, results which could be much more easily achieved in a well organized psychiatric unit. This comes about from the simple fact that all the services available in a psychiatric clinic as a part of an established régime have to be offered only on a special basis in the general hospital. Furthermore only a very limited variety of patients can be accepted at all in a general hospital. Even mildly depressed cases the hospital may object to accepting because of the potential suicidal risk. But beyond all these limitations is a more serious one, namely, a certain latent if not overt hostility on the part of the personnel of the general hospitals directed toward psychiatric patients of all sorts. There is an enormous educational job to be done in connection with the use of general hospitals for psychiatric patients. The recent announcement of a prize offered by the Modern Hospital Publishing Company for the best plan for practical resolution of this issue is a step in the right direction.

3. He will have little part in the training programs of the established clinics. Why are there no "attending psychiatrists" in the real sense in our important psychiatric hospitals? Aside from the organizational issues involved which must be apparent to one with years in such hospitals, one cannot truthfully exclude as the primary reason the advantages accruing from a single system of treatment and teaching. That any single system may finally tend to exhibit ex-cathedra propaganda propensities cannot be known to those receiving instruction at its hands. Frankly to have dissenting elements too heavily represented could be very disruptive to the morale of an organization.

To state this simple fact is to acknowledge that most hospitals are organized about a central body of concepts, which will vary from one hospital head to another, but which determine the treatment and teaching program. This in turn is a commentary on the status of present day psychiatry, exhibiting several vehement "isms," aggressively belligerent or defensive depending on the local situation, and showing little of that tolerance which one might reasonably expect, considering that there demonstrably are various means of arriving at essentially similar ends. The experienced practitioner may prefer the

refinement of his own methods, derived from his training and experience, but he will early in the game have noted that many methods at the most diverse hands accomplish desirable results. In short he will come to an appraisal of what methods are best for him, but he will gladly extend the privilege of differing to his colleagues. Further he will find a large area of general agreement, and he will seek to expand this by mutual understanding.

Compare this state of affairs with that in surgical and medical services. Here it is generally conceded that a combination of full-time and part-time supervision with a diversity of viewpoints is desirable for the best of all-round instruction. Can it be that surgeons and physicians exhibit more tolerance than psychiatrists?

There are only two ways of altering this situation. One is by throwing open the facilities of the present "closed" hospitals to qualified general practitioners, in the same manner as is done in general hospitals to internists and surgeons. The other is by the establishment of psychiatric facilities in general hospitals, each with its attending and resident staff.

For many reasons the latter would seem to be the development more likely to occur. The former alternative would have to hurdle the difficulties arising (1) from the position of many of these as institutions performing a special service, *e.g.*, as essential research and teaching institutions, where unity of ideology and of effort may appear necessary; (2) from the tradition of psychiatry in this country still as an institution-dominated profession, in which the emphasis has shifted from state hospital to teaching and research institutes. The present closed hospitals cannot begin to fill the need for psychiatric facilities—either physically, in the number of beds available, or professionally, in the variety of types of training and therapy offered.

Barred from active participation in the work of the very institutions who depend on his reference for a good share of their admissions, the practitioner works in an unhealthy isolation. If he attends the local and national society meetings, he comes away with little reward, for no one has mentioned

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the practical issues which are his daily problem, nor does he hear any challenge to hal- lowed psychopathological concepts. He is fed on "research," statistical studies, exhortation, and effulgent praise of this or that pioneer—mostly from representatives of the closed institutions.

Maybe this is the practitioner's own fault. He may with some justice have concluded that without the formal backing that goes with titles he can carry no conviction. If so, let him shake off such delusion. One of our greatest figures began and ended with the denial of recognition from the established order. His very isolation served his maturation processes.

Let us recognize these few simple and salient facts:

1. The practitioners of this country today carry a large share of the total psychiatric case load—perhaps the largest.

2. They are peculiarly circumscribed in the best exercise of their professional skill by the denial of the use of present established psychiatric facilities, and by the severe lack of generally available psychiatric facilities, open to all.

3. The general level of psychiatric care may not be judged by the work of the few established clinics, but only by the quality of professional skill and of treatment facilities available to the masses. Psychiatric care will never equal the status of surgical and medical care until there are more and better trained psychiatrists, having at their command adequate facilities for treatment. The extension of medical expense insurance coverage will put unprecedented demands on the private practice of psychiatry pointing up our present inadequacies in the most glaring fashion. This will either be met by an expansion of private facilities or most assuredly by governmental intervention.

4. The practitioners must organize locally and nationally for the simple purpose of defeating that isolation which would spell their professional regression and the lowering of the quality of service available to the community. Such an organization must rest on the recognition that many means can reach desirable ends. This is no profession of psychopathologic nihilism but a challenge to a pooling of experience, an invitation to an "open" rather than to any "closed" system of psychopathology. The large task of this organization will be educational, to influence physicians, community organizations, hospital directories and superintendents and ordinary people generally toward such an understanding of the problem that solutions will be urgently demanded.

The practitioners as a united group can and should use their community contacts to the utmost to promote the community welfare through the betterment of the available psychiatric service. As our society is at present organized, this end will include an enlargement of the opportunities for private psychiatric care.

In Maryland, the private practitioners have recently organized as the Association of Private Practicing Psychiatrists. Every kind of psychiatric background is represented. We are attempting to study the whole problem of community psychiatric care, to get at the facts of our difficulties which we all share, and our opportunities, and to use our influence for the betterment of the community understanding of the issues involved. Everywhere we meet vested interests, some hostile, some sympathetic. We may expect to succeed in the degree that our vision coincides with the community needs. The establishment of similar groups in every part of the country would soon lead to a clarification of the difficulties and to a variety of proposals for their resolution.

## REPORTS OF COMMITTEES

### PROGRESS REPORT OF SPECIAL COMMITTEE ON PSYCHIATRY IN THE ARMED FORCES

31 May 1945.

**Personnel.**—With VE day, it is expected that many medical officers will be returned to this country under War Department policy. Except for a few key specialists, the majority of medical officers who have not had overseas duty, will be sent on to the Pacific Theater, with many of the returned medical officers taking their place in this country. The shortage of psychiatrists is still acute. Specific moves will very shortly take place, including the transfer of Lieutenant Colonel Malcolm J. Farrell, who for three years has been the Deputy Director of the Neuropsychiatry Consultants Division, in the Office of The Surgeon General. He is to be the Commanding Officer of a hospital ship, which will carry chiefly neuropsychiatric patients.

Colonel Franklin G. Ebaugh, who has been the Consultant in Neuropsychiatry in the Eighth Service Command, will become the Consultant in Neuropsychiatry in the Southwest Pacific Theater.

Lt. Colonels Lauren Smith and Douglas Thom have both recently been promoted to full colonels. Colonel Smith is Consultant in Neuropsychiatry in the Ninth Service Command, and Colonel Thom in the Second Service Command. It is anticipated that most of the neuropsychiatric staff in the Neuropsychiatry Consultants Division of The Surgeon General's Office, will be replaced by overseas psychiatrists.

It is not anticipated that many psychiatrists will be discharged from the service for some time. An acute shortage exists in this field, coupled with the fact that the Medical Department activities of necessity reached the peak some time following cessation of hostilities, which will require their continued presence in the army.

**School of Military Neuropsychiatry.**—The graduation May 15th, of the 20th class from the School of Military Neuropsychiatry, now located at Mason General Hospital, brought the total number of graduates to over 1,000 men. This school will continue under the direction of Colonel William C. Porter, with a faculty of 5 men. A new class began immediately following the graduation of the 20th class; another class will begin the course in July, composed entirely of new medical officers who have just come into the Army. Under the direction of Doctor S. Bernard Wortis of the New York University and Doctor Nolan D. C. Lewis of Columbia University a three months' course will be instituted at these universities for an additional group the 1st of September.

**Method of Recording the Diagnoses.**—A War Department Circular will soon be issued, directing all medical officers to record the diagnoses of various types of psychoneuroses in a specific man-

ner. The term "psychoneurosis" will no longer be used on individual clinical records, but in each case the specific psychoneurotic reaction types will be stated. In addition, the formulation of the diagnosis will include a statement as to the type, degree and duration of the external stress, evaluation of the predisposition and personality, and finally, the degree of impairment of functional capacity, due to the psychiatric disability.

**Psychiatric Social Work.**—The utilization of psychiatric social workers in the army has been materially increased as the war has progressed. Initially the army's source for social work assistance was through the Red Cross. Gradually, this has been augmented by the utilization of psychiatric social work personnel within the military. A military occupation specialty number and designation has been created for both skilled and semi-skilled workers in this field. A training program is being planned to provide training for both of these groups. Mrs. Elizabeth H. Ross has been serving for some months in the capacity of Consultant to the Neuropsychiatry Consultants Division of The Surgeon General's Office in this field.

**Psychologists.**—Clinical psychologists are now effectively working in most of the general army hospitals, both in this country and overseas. Approximately 400 such individuals are now assigned to the neuropsychiatric services or sections of the general hospitals, as well as the convalescent hospitals. A school under the direction of The Adjutant General has provided training for this group, two weeks of which are now spent at Mason General Hospital.

**Psychiatric Treatment.**—Treatment for psychiatric patients in the Army is now centralized in two general types of installations for patients in this country. Thirty hospitals have been designated as psychiatric centers, each of which is equipped for the special treatment of psychotic patients and some of which have additional bed capacities for psychotic patients in remission or for severe psychoneurotic patients who require hospital care. The psychoneurotic patients are treated in 12 convalescent hospitals, one or more in each regional area, known as the service commands. In each of the latter, the neuropsychiatric service is one of the largest, if not the largest, component of the hospital. Wide utilization is made of group psychotherapeutic methods. All other hospitals are equipped with extensive facilities to provide educational, industrial, vocational, recreational and occupational activities.

**Civilian Psychiatric Research Team to the E. T. O.**—Following personal contacts by members of the Neuropsychiatry Consultants Division of The Surgeon General's Office with the combat theaters, a need was recognized to more adequately investigate psychodynamics of battle casualties. The army psychiatrists in combat areas were, in most

instances, under far too much pressure with heavy case loads to attempt investigative research. With this specific problem in mind, The Surgeon General's Office requested The Office of Scientific Research and Development, through the cooperation of the New Plans Division of the War Department, to send a mission to the E. T. O. for this purpose. On the 20th of May, Doctors John Whitehorn, Lawrence Kubie, John Romano, Leo Bartemeier, and Karl Menninger, left for the European Theatre and immediately proceeded to the combat area. As the result of the cessation of hostilities shortly thereafter, this group was utilized to investigate psychiatric aspects of several other problems in the theater and were able to make contact with many of the psychiatrists in the 1st, 3rd, 7th, 9th, and 15th Armies, as well as to confer with many of the psychiatrists in the army hospitals. They are expected to return to this country by 15 or 20 June.

REPORT OF THE EXECUTIVE COMMITTEE, HELD AT THE HEADQUARTERS OF THE AMERICAN PSYCHIATRIC ASSOCIATION, 9 ROCKEFELLER PLAZA, NEW YORK CITY, AUGUST 11, 1944

A meeting of the Executive Committee of The American Psychiatric Association was held at the headquarters of the Association, Room 924, 9 Rockefeller Plaza, New York City, on August 11, 1944, at the call of the President, Dr. Bowman. The following members were present: Dr. Hamilton, the President-Elect (presiding), Dr. Thom and Dr. Overholser. Dr. Bowman was prevented by transportation difficulties from attending, and Dr. Strecker by urgent military commitments. Doctors Burlingame and George S. Stevenson were present by invitation.

The meeting was called to order by Dr. Hamilton at 10:45 a. m., a quorum being present, and proceeded to consider a number of problems submitted by the President.

The matter of the relation of the Association to its members in the military service was fully discussed. It was voted that the Association declares its purpose to foster arrangements whereby psychiatrists returning from military service will be assisted in securing satisfactory professional assignments.

The Committee considered the questions of deferment from the draft of suitable numbers of pre-medical students as a means of ensuring a flow of medical graduates. It was voted that the Committee, acting for the Association, endorses the purpose of House Bill 5128, providing for such deferment, and that the Secretary be instructed so to advise the suitable committees of Congress.

In relation to the interest of the Association in the work of the Baruch Committee on Physical Medicine and in the development of physical therapy as it is applicable to psychiatry, it was voted to request the Secretary to continue his participation in the work of the Scientific Advisory Committee of the Baruch Committee.

Consideration was given to the problem of a possible permanent home for the Association. It was voted to request Dr. Stevenson and Mr. Davies to prepare a memorandum on the advantages and

disadvantages and costs involved if the Association should seek quarters in the same building with the National Committee for Mental Hygiene, such memo to be submitted for action at the December meeting of the Council.

It was voted to request the President to appoint a committee on Clinical Psychology, not to exceed five members.

It was voted to recommend to the President that he designate not more than five members to work on the problems of industrial psychiatry in collaboration with the Chairman of the Committee on Public Education.

The committee considered the petition submitted on May 18 to the Council and by the latter referred to the Executive Committee, the petition dealing with the subject of rehabilitation and the Association's activity therein. It was voted to be the sense of the Committee that further work in rehabilitation may properly be done in accordance with the desires of the petitioners; that the Committee recommends that private funds be sought to amplify the work now carried on in this field by the National Committee for Mental Hygiene, and that if these funds be secured the President be requested to recommend to the National Committee several Fellows of this Association to serve as an Advisory Committee.

Certain correspondence was submitted dealing with the desirability or otherwise of wide publicity for certain group therapy activities now being carried on. It was noted to be the sense of the Committee that all group therapy should be considered a medical matter to be instituted and carried on under the supervision of competent physicians and kept free from the type of publicity which is offensive to reputable physicians.

It was voted to reaffirm the action of the Association taken on May 20, 1942, authorizing the Special Committee on Psychiatry in the Armed Forces to meet issues appropriately as they arise.

It was voted to request the Committee on International Relationships to formulate recommendations for consideration of the Council concerning the desirability of extending full membership to citizens of the Latin American countries.

The report of the Certified Public Accountant on the Annual Meeting account was presented and approved.

It was voted to authorize a budget of not more than \$500 for the current year for the Committee on Program.

The meeting adjourned at 2:05 p. m.

WINFRED OVERHOLSER, M. D.,  
*Secretary-Treasurer.*

REPORT OF MEETING OF EXECUTIVE COMMITTEE,  
HELD IN THE HOTEL LEXINGTON, NEW YORK  
CITY, DECEMBER 17, 1944

The Executive Committee met in the Hotel Lexington, New York City on December 17, 1944, being called to order at 10:15 a. m. by the President, Dr. Bowman. The following members were present in addition to Dr. Bowman—Doctors Hamilton, Strecker and Overholser. Dr. Thom was prevented by illness from attending. The Executive Assis-

tant, Mr. Davies, was also present. The minutes of the meeting of August 11, 1944 were approved, having previously been circulated to the members.

It was voted on motion of Dr. Overholser, seconded by Dr. Hamilton, that the Committee recommend to the Council the acceptance of the New Jersey Neuropsychiatric Association as an affiliated society.

It was voted, on motion of Dr. Strecker, seconded by Dr. Overholser, to recommend to the Council that New York City be selected as the location of the 1946 meeting.

After some discussion of the possibility of making full membership open to psychiatrists from Latin America, it was voted on motion of Dr. Hamilton, seconded by Dr. Strecker, to defer action pending the report of the Committee on International Relationships.

Consideration was given to the proposal that a Committee on Affiliated Societies be established. It was voted, on motion of Dr. Strecker, seconded by Dr. Hamilton, that in view of the fact that each affiliated society is now invited to send representatives to all meetings of the Council, it is the sense of the Executive Committee that no action regarding such a committee seems necessary.

The audited financial report of the Centennial Meeting was considered. It was voted, on motion of Dr. Strecker, seconded by Dr. Hamilton, that the Treasurer be authorized to transfer five hundred dollars from the General Fund to the Association Meeting account.

It was voted, on motion of Dr. Overholser, seconded by Dr. Strecker, to ratify the mail ballot of the Committee authorizing the travel expense for meetings of the Nominating Committee, Committee on Research, and the Committee on Psychiatric Standards and Policies.

On consideration of the suggestion of the Committee on Research that a prize be offered for research activity, it was voted on motion of Dr. Hamilton, seconded by Dr. Overholser, that the Executive Committee is interested in the proposal that an award for research be set up, and hopes that the definition of the field of research and the conditions under which such an award might be made will be formulated so that further consideration may be given.

It was voted, on motion of Dr. Overholser, seconded by Dr. Strecker, to recommend to the Council that the Association pay the full cost of the annual meetings and that a sum not to exceed \$1,000 be granted to the local committee for expenses.

On consideration of the proposal that the Association sponsor a publication in French concerning progress in American psychiatry, it was voted on motion of Dr. Hamilton, seconded by Dr. Strecker, that the Committee recommend to the Council that although the Association sympathizes with the effort to inform French speaking psychiatrists of the progress of American psychiatry, the Association has no arrangement whereby it could sponsor the proposed volume.

The meeting adjourned at 12:20 p. m.

WINFRED OVERHOLSER, M. D.,  
Secretary-Treasurer.

REPORT OF THE MEETING OF THE COUNCIL, HELD IN  
THE HOTEL LEXINGTON, NEW YORK  
CITY, DECEMBER 17-19, 1944

A meeting of the Council of The American Psychiatric Association was held at the Hotel Lexington, New York City, on Sunday, December 17, 1944, being called to order at 2:15 p. m. by the President, Dr. Karl M. Bowman. Those present, in addition to Dr. Bowman, were Doctors Hamilton, Overholser, Strecker, Ratliff, Ruggles, Waggoner, Harris, Moersch, Cathcart and Gayle. The following Chairmen of Committees were present: Doctors Chambers (acting for Dr. Fitzpatrick), Dayton, Kenworthy, Malamud, Sommer, G. S. Stevenson, and Zilboorg. The Cincinnati Society of Neurology and Psychiatry, the Connecticut Society for Neurology and Psychiatry, the Illinois Psychiatric Society and the Massachusetts Psychiatric Society were represented respectively by Doctors Ratliff, Dayton, Sommer and Chambers. Past Presidents in attendance were Doctors Chapman, Meyer, Russell and G. H. Stevenson. Mr. Austin M. Davies, the Executive Assistant, was also present.

The Secretary presented the reports of the meetings of the Executive Committee of August and of December 17, 1944 which were approved on motion of Dr. Ruggles, seconded by Dr. Harris.

The report of the Executive Assistant was accepted on motion of Dr. Ratliff, seconded by Dr. Moersch.

It was voted on motion of Dr. Ratliff, seconded by Dr. Harris, to accept the resignations of Dr. Albert C. Esposito and Dr. George B. Kidd on payment of their dues.

It was voted, on motion of Dr. Overholser, seconded by Dr. Ruggles, to award the Salmon Medal to Dr. Joseph W. Moore, in recognition of his valuable contribution to the pathology of general paresis.

It was voted, on motion of Dr. Ratliff, seconded by Dr. Overholser, to refer to the Committee on the History of Psychiatry the proposal to put on tour the historical exhibit prepared for the Centennial Meeting by Dr. Robert Bookhammer.

A report was presented by Dr. Stevenson, as requested by the Executive Committee, regarding the relationship between the Association and the National Committee for Mental Hygiene, together with the questions of a permanent home for the Association. No specific action was taken.

The report of the Committee on Arrangements was presented by Dr. Conrad Sommer. The Council voted, on motion of Dr. Waggoner, seconded by Dr. Cathcart, to accept the report and to appropriate a sum not exceeding \$1,000 for the expenses of the committee in making arrangements for the 1945 meeting.

Dr. Malamud presented the report of the Committee on Program. It was voted on motion of Dr. Strecker, seconded by Dr. Cathcart, to accept the report and to authorize the Committee to incur expenses for outside speakers not exceeding \$500.

The meeting adjourned at 5.40 p. m., to reconvene the following morning.

The meeting was again called to order at 10 a. m. on December 18, 1944 by Dr. Bowman. Present were Doctors Bowman, Hamilton, Overholser, Councillors Cathcart, Gayle, Harris, Moersch, Ratliff, Ruggles, Strecker, Waggoner, Past Presidents Chapman, Meyer, Russell and Stevenson, and the following Chairmen—Doctors Ackerly, Burlingame, Chambers, Dayton, Ebaugh, Kenworthy, Malamud, Moore, Myerson, Plant, Schroeder, Sommer, Tarumianz. Dr. Robert P. Knight represented the Kansas Psychiatric Society, Dr. T. A. Watters the New Orleans Society of Neurology and Psychiatry, and Col. W. C. Menninger of the Surgeon General's Office was present by special invitation.

Col. Schroeder presented the report of the Committee on Legal Aspects of Psychiatry. It was voted to accept the report, on motion of Dr. Ruggles, seconded by Dr. Gayle.

The report of the Committee on Occupational Therapy was presented by Dr. Clifford Moore, and was accepted after discussion on motion of Dr. Harris, seconded by Dr. Ratliff.

Col. Ebaugh read the report of the Committee on Psychiatry in Medical Education. The report was accepted on motion of Dr. Strecker, seconded by Dr. Ratliff.

Col. Menninger was then called on, and read a prepared statement, consideration of which was deferred.

Dr. Kenworthy presented the report of the Committee on Psychiatric Social Service. It was accepted on motion of Dr. Strecker, seconded by Dr. Overholser.

Dr. Plant reported for the Committee on Clinical Psychology. It was voted, on motion of Dr. Overholser, seconded by Dr. Cathcart, to accept the report and to ratify the action of the Executive Committee authorizing the President to appoint the Committee on Clinical Psychology.

The meeting suspended at 12.30 p. m. to reconvene at 2 p. m.

The meeting reconvened at 2 p. m. In addition to those present at the morning session, Dr. Farrar, the Editor of the JOURNAL, was in attendance.

Dr. Burlingame presented the report of the Committee on Public Education. The report was accepted on motion of Dr. Waggoner, seconded by Dr. Cathcart.

The report of the Committee on Psychiatric Standards and Policies was read by the Chairman, Dr. Tarumianz. The report was accepted on motion of Dr. Ratliff, seconded by Dr. Moersch.

A general discussion then followed on the various topics brought up in the two reports just enumerated. It was informally agreed that a group of the members would meet during the evening and report to the Council in the morning concerning ways and means of implementing the various suggestions embodied in the discussion.

At this point Dr. Burlingame, as Chairman of the Salmon Committee of the New York Academy of Medicine, rose to request that he be recorded

as in favor of the action taken by the Council in voting to award the Salmon Medal to Dr. Joseph W. Moore.

The meeting adjourned at 5.30 p. m., to reconvene at 9.30 the following morning.

The meeting was again called to order by the President at 9.45 a. m. on December 19, 1944. The following were present: Doctors Bowman, Hamilton and Overholser, Councillors Cathcart, Gayle, Harris, Moersch, Ratliff, Ruggles, Strecker, Waggoner, Past Presidents Chapman, Meyer, Stevenson, Chairmen Ackerly, Burlingame, Chambers, Dayton, Malamud, Myerson, Sommer, Zilboorg, and Representatives of Affiliated Societies Bartemeier (Michigan), Knight (Kansas), and Watters (New Orleans), Editor Farrar, and Col. W. C. Menninger, Commdr. Francis J. Braceland, and Dr. Robert H. Felix (Public Health Service).

Dr. Ratliff presented a report from the informal group which met on the preceding evening. It was voted, with one dissenting vote, on motion of Dr. Ratliff, seconded by Dr. Waggoner, that the President appoint a Special Committee of not to exceed five persons to perform the following: subject to ratification by mail or other vote by the Council, to recommend the employment as soon as possible of a Medical Director. It was then voted on motion of Dr. Ratliff, seconded by Dr. Strecker, that the rest of the report of the informal group be called to the attention of the Special Committee for their consideration, and that a meeting of the Council be held before March 1 for appropriate action on the committee's report.

It was voted, on motion of Dr. Overholser, seconded by Dr. Waggoner, that it is the sense of the Council that the expense involved in the establishing of a position of Medical Director be met by an increase in the dues of Members and Fellows.

The report of the JOURNAL was presented by the Editor, Dr. Farrar. It was voted, on motion of Dr. Waggoner, seconded by Dr. Meyer, to accept the report.

Dr. Ruggles presented the report of the Special Committee on Psychiatry in the Armed Forces, which was accepted on motion of Dr. Hamilton, seconded by Dr. Gayle.

The report of the Committee on War Psychiatry was read by the Secretary, in the absence of Dr. Steckel. It was accepted on motion of Dr. Harris, seconded by Dr. Cathcart.

Commdr. Braceland made a statement concerning psychiatric problems in the Navy.

Dr. Felix read a prepared statement concerning the psychiatric plans of the U. S. Public Health Service. It was voted on motion of Dr. Ruggles, seconded by Dr. Ratliff, to inform the Surgeon General of the U. S. Public Health Service that the Association views with great interest and pleasure the constructive program of the Public Health Service relating to the fostering of better in-patient care of mental patients, of the development of out-patient clinics, and of research.

The meeting recessed at 1 p. m., reconvening at 2.15 p. m.

The report of the Committee on International Relationships was read by the President in the absence of Chairman Myers, and accepted on motion of Dr. Ratliff, seconded by Dr. Ruggles.

Dr. Ackerly reported for the Committee on Membership; the report was accepted on motion of Dr. Overholser, seconded by Dr. Moersch.

It was moved by Dr. Hamilton, and seconded by Dr. Ruggles, that the development of a syllabus setting forth an outline of the minimal standards for undergraduate and postgraduate education in psychiatry be referred to the Committee on Psychiatric Education with a request for action at as early a time as feasible. So voted.

It was voted on motion of Dr. Hamilton, seconded by Dr. Ratliff, that the matter of standards for psychiatric clinics and hospitals be referred to the Committee on Standards and Policies with a request for prompt action.

It was voted on motion of Dr. Strecker, seconded by Dr. Overholser, that the question of a program of graduate and postgraduate training in psychiatry be referred to the Committee on Psychiatric Education.

It was voted on motion of Dr. Ratliff, seconded by Dr. Strecker, to refer to the Committee on Nomenclature and Statistics a re-evaluation of psychiatric nomenclature, a simplification of psychiatric terminology, and the publication of authoritative definitions of psychiatric clinical syndromes.

It was voted, on motion of Dr. Meyer, seconded by Dr. Harris, to request each Committee Chairman to report monthly to the Executive Committee unless he has nothing significant to report, the Executive Committee to pass on to the Committee on Public Education those portions of importance to it.

It was voted on motion of Dr. Strecker, seconded by Dr. Harris, that the Council authorize the appointment of Committees on the following: Veterans, General (academic and vocational), Education, Recreation and Public Health.

Dr. Strecker moved the following resolution, seconded by Dr. Waggoner: "Prompt consideration should be given by the Council or a specially appointed committee to develop ways and means to:

"A. Give aid to the neuropsychiatric veteran returning to civilian life.

"B. Provide information and education to families of such veterans.

"C. Provide suggestions to communities and/or community agencies regarding methods of aiding these veterans, including organization of clinics, informational service, G.I. rights, etc." It was so voted.

It was voted on motion of Dr. Ruggles, seconded by Dr. Strecker, that the President be requested to send a letter to each man practicing psychiatry in the Armed Forces, American and Canadian, encouraging his interest in the Association and in psychiatry.

It was voted on motion of Dr. Ruggles, seconded by Dr. Gayle, that the possible establishment of a news letter be referred to the Executive Committee.

Dr. Hamilton moved, seconded by Dr. Cathcart,

that ways and means be considered to give aid and recognition to our membership in the Armed Forces, including plans for a central registry and other means of help to this group in their readjustment to civilian life. So voted.

The report of the Committee on Psychiatric Nursing was read by Dr. Chambers, and approved on motion of Dr. Ruggles, seconded by Dr. Cathcart.

The report of the Committee on the History of Psychiatry, presented by Dr. Zilboorg, was accepted on motion of Dr. Moersch, seconded by Dr. Harris.

Dr. Myerson presented the report of the Committee on Research, which was accepted on motion of Dr. Waggoner, seconded by Dr. Overholser.

The Nominating Committee reported through Dr. Ruggles the following nominations:

President: Samuel W. Hamilton.

President-Elect: Winfred Overholser.

Secretary-Treasurer: Leo Bartemeier.

Councillors: Karl M. Bowman, Frederick H. Allen, Harry C. Solomon, and Abram E. Bennett.

Auditor: George H. Preston.

Dr. Dayton presented the report of the Committee on Nomenclature and Statistics, and requested authority to travel to Washington to confer with the services. The report and request were approved on motion of Dr. Strecker, seconded by Dr. Waggoner.

The report of the Committee on Ethics was read by the Secretary in the absence of Chairman Vernon. It was accepted on motion of Dr. Strecker, seconded by Dr. Ratliff.

There was an informal discussion of the American Board of Psychiatry and Neurology. It was voted on motion of Dr. Ruggles, seconded by Dr. Ratliff, to request that the members of the Board nominated by the Association be requested to report at a later meeting on the progress and accomplishments of the Board, with recommendations.

It was voted on motion of Dr. Overholser, seconded by Dr. Gayle that the acts of the Executive Committee since the last meeting of the Council be ratified, and that the expenses of the present meeting of the Council be authorized.

By a rising vote, Dr. Strecker's motion was passed, thanking the President for his able and gracious conduct of the deliberations of the Council.

The meeting was adjourned *sine die* at 4:30 p. m.

WINFRED OVERHOLSER, M. D.,

*Secretary-Treasurer.*

(A stenotyped account of the entire proceedings was prepared, and is on file at the office of the Association.)

REPORT OF THE MEETING OF THE COUNCIL HELD IN  
THE PALMER HOUSE, CHICAGO, ILL.,  
FEBRUARY 26 AND 27, 1945

A special meeting of the Council of The American Psychiatric Association was held at the Palmer House, Chicago, Illinois, on February 26, 1945, being called to order by the President, Dr. Karl M. Bowman, at 10:20 a. m. The following Councillors were present: Doctors Hamilton (President-elect), Cathcart, J. K. Hall, Harris, Moersch, Ratliff,

Ruggles, Strecker, Thom, Waggoner and Young; Chairmen K. A. Menninger, C. A. Neymann, and M. A. Tarumianz, Dr. DeWitt C. Burkes (Northern Pacific Society of Neurology and Psychiatry), Dr. Leo Bartemeier and Mr. Austin M. Davies.

In the absence of the Secretary Dr. Bartemeier was appointed Secretary *pro tem.* by vote of the Council.

The meeting scheduled for May 1945 having been postponed by a mail vote of the Council, it was voted, on motion of Dr. Harris, seconded by Dr. Waggoner, that the meeting be held in August or later, at the discretion of the Executive Committee.

Dr. Karl Menninger was then asked by the President to present the report of his Special Committee. After the presentation, Dr. Ruggles moved, Dr. Waggoner seconding, that the Council go on record as desiring a stronger organization with more full time leadership. The motion was carried.

Dr. Tarumianz then read the report of the Committee on Standards and Policies. The meeting recessed for lunch, at 12:45 p. m., resuming at 2 p. m. Dr. Tarumianz then reported on a recent conference with General Frank T. Hines, Administrator of Veterans Affairs, and Mr. Davies presented a statement concerning a Non-Profit Foundation.

There was general discussion of the three reports. Dr. Ruggles moved, Dr. Strecker seconding, that the Council "appreciate the report of the (Special) Committee, ask further study of this Committee along the lines of organization as they indicated, and that they be empowered to call in for consultation those persons they wish for advice, and to pay their traveling expenses and an honorarium as it is asked for, and that the Committee, for their meetings and for their consultants, be authorized to spend a sum not to exceed \$2,000, and to consider candidates." It was so voted.

It was voted on motion of Dr. J. K. Hall, seconded by Dr. Thom, that the Council appropriate not to exceed \$2,000 to permit the President to visit as many of the affiliated societies as possible during his year of office.

It was voted on motion of Dr. Tarumianz, seconded by Dr. Thom, to approve with certain minor changes the section of the report of the Committee on Standards and Policies relating to outpatient clinics.

The meeting adjourned at 6 p. m., reconvening at 9:10 a. m. on February 27, 1945.

The President announced the personnel of four committees authorized at the meeting in December 1944 as follows:

*Veterans:* Howard Potter, Edw. Zabriskie, James Wall, and Howard K. Petry.

*General Academic Education:* Conrad Sommer, David Slight, Frank O'Brien, and Paul I. Yakovlev.

*Recreation:* Clifton Perkins, Walter Barton, and Conrad Sommer.

*Public Health:* Robt. Felix, A. P. Noyes, S. W. Hamilton, A. H. Ruggles, E. A. Strecker, S. B.

Wortis, F. W. Parsons, Howard Potter, Grover Kempf, Frank Tallmann, H. C. Henry, and C. T. Perkins.

The following motion was passed on motion of Dr. Ruggles, seconded by Dr. Strecker: that the Council approves in principle this report on Standards for Hospitals, refers it back to the Committee for further revision; that a list of persons designated by the President and President-elect and others, as suggested by other members, be circularized; that the affiliated societies be given a copy of the report and asked to consider it; that the Committee will then meet at a convenient time suggested by Dr. Tarumianz, probably in April, will consider all of these suggestions, will revise the report as they deem best, will submit the report to the Executive Committee, and after formal approval the report will be published at the earliest possible moment.

It was voted, on motion of Dr. Cathcart, seconded by Dr. Hamilton, that the Special Committee on War Psychiatry be disbanded with the thanks of the Association for their services.

There was a general discussion of the relationship of the Association to the American Board of Psychiatry and Neurology, and the Secretary was instructed, on motion of Dr. Ruggles, seconded by Dr. Harris, to ask from the Secretary of the American Board a detailed statement of their meetings; the applications; the rejections and the grounds for rejection; the number certified in psychiatry; the number certified in neurology; the number certified in both; an audited financial statement; and that such a report be submitted to The American Psychiatric Association each year.

It was also voted, on motion of Dr. Ratliff, seconded by Dr. Hall, that the President appoint a committee of former Board members of the American Board to consider and report on the advisability of setting up a separate Board of Psychiatry.

It was voted on motion of Dr. Ruggles, seconded by Dr. Strecker, to authorize the Executive Assistant to proceed with a lease for two years from 1946, for suitable space, not to exceed 1000 sq. ft., subject to the approval of and to any necessary modifications by the Executive Committee.

The question of the salary of the Executive Assistant was referred to the Executive Committee on motion of Dr. Ratliff, seconded by Dr. Ruggles.

The Council likewise went on record as expressing its great appreciation for the invaluable services of Mr. Davies over the past years.

The meeting adjourned *sine die* at 1:20 p. m.

LEO H. BARTEMEIER,  
*Secretary pro tem.*

(A stenotype copy of the minutes is available for inspection at the office of the Association.)

REPORT OF THE MEETING OF EXECUTIVE COMMITTEE,  
HELD IN THE OFFICE OF THE SECRETARY, SAINT  
ELIZABETH'S HOSPITAL, WASHINGTON, D. C.,  
JUNE 4, 1945

A meeting of the Executive Committee was held in the office of the Secretary at Saint Elizabeths

Hospital, Washington, D. C., June 4, 1945. The following were present: Doctors Hamilton, Strecker, Thom and Overholser and the Executive Assistant, Mr. Davies. The meeting was called to order at 10.00 a. m. by the President-Elect, Dr. Hamilton (President Bowman was prevented by distance and by difficulties of transportation from attending).

A letter from President Bowman was read, as was a recent communication from the Office of Defense Transportation. There was considerable discussion of the possibility of holding a meeting this year; it was unanimously agreed and voted that the Annual Meeting for 1945 be cancelled as a war measure, all officers to hold over as provided by the Constitution (Art. VI, Sec. 2). With reference to the election of members, it was voted that the current recommendations of the Committee on Membership be submitted to the Council; that those names which are approved by Council be submitted to the Fellows and Members by mail, and that in all instances in which no objection is raised before September 1, 1945, the candidate shall be notified that he has been accepted for all privileges and benefits of the Association, and that his election will be brought up for ratification at the next Annual Meeting of the Association, to be dated from 1945. It was voted to hold the 1946 meeting in Chicago.

A letter to Dr. Bowman from Dr. José Fernandez, Clinical Director of the National Psychopathic Hospital in Manila, Philippine Islands, was read, requesting financial assistance for the hospital, wrecked by the Japanese. It was voted to make a gift to Dr. Fernandez of \$250 for such hospital

purposes as are not provided by governmental appropriations.

There was a full discussion of the problems of postwar graduate education and placement. It was voted to instruct the Secretary to request the co-operation of the Armed Services in determining the postwar plans of the men now doing psychiatric work regarding refresher courses or fellowships in psychiatry and in positions.

Mr. Davies discussed the question of a Psychiatric Foundation. He was requested to formulate the questions which would have to be answered as a preliminary to a full report for benefit of Council.

The report of F. S. Parsons, Auditor, was filed. Mr. Davies reported that a copy has been sent to the Auditors of the Association for their approval.

The resignations of Doctors George E. McPherson, René Breguet and W. R. Summers were approved for submission to Council.

It was voted to ratify the mail votes of the Executive Committee taken since the last meeting, viz.: To authorize travel expenses for a meeting of the Committee on Standards and Policies and for travel of two members of the Committee to Washington; to authorize expenses of a meeting of the Committee on Public Education and of the Committee on Psychiatry in Medical Education, and to increase the annual salary of the secretary of the nursing survey to \$1,500.00.

There being no further business, the meeting adjourned at 2.50 p. m., lunch having been served during the noon hour.

WINFRED OVERHOLSER, M. D.,  
*Secretary-Treasurer.*

## APPLICATIONS FOR MEMBERSHIP

The following list of applicants passed by the Membership Board and by the Council of The American Psychiatric Association is now referred to the whole Association for vote. Since no annual meeting can be held and since this mail vote does not meet our constitutional requirements, your vote now will go on record and you will be asked to confirm that vote at the next meeting to be held in Chicago, May 27 to 31, 1946, at the Palmer House Hotel.

Please let us know if you have any objections to any of the names submitted in the following list. Send your vote to Mr. Austin M. Davies, Executive Assistant, 9 Rockefeller Plaza, New York 20, N. Y.

### ASSOCIATE MEMBERSHIP, MAY 1945

- Albronda, Henry F., Lt. (jg), MC, USN, U. S. Naval Hosp., San Diego, Calif.
- Anderson, Richard W., 1st Lt., MC, Cushing General Hosp., Framingham, Mass.
- Antalis, Angelo J., Northington General Hospital, Tuscaloosa, Ala.
- Apffel, Phillip R., Lt., MC, USNR, ABATU, Lido Beach, L. I., N. Y.
- Baer, Frederic L., Mount Zion Hospital, San Francisco, Calif.
- Bailey, Pearce, Lt., MC(S)USNR, U. S. Naval Hosp., Philadelphia, Pa.
- Baker, Calvin L., Capt., MC, 1st Bn., Convalescent Hosp., Ft. Story, Va.
- Balikov, Harold, 1st Lt., MC, SCSU, ASF Conv. Hosp., Camp Upton, N. Y.
- Barris, Ralph W., Ashford General Hosp., White Sulphur Springs, Va.
- Belmont, Herman S., 1st Lt., MC, Convalescent Hosp., Camp Upton, N. Y.
- Berger, Milton M., 1st Lt., MC, APO 244, c/o PM, San Francisco, Calif.
- Boswell, Wade Hampton, U. S. Naval Hosp., Portsmouth, Va.
- Bremner, Walter V., Surg., Lt. Comdr., RCNVR, 480A Brunswick Ave., Toronto, Ont., Canada.
- Brener, Lazard S., 1st Lt., MC, ASF Conv. Hosp., Camp Upton, N. Y.
- Cammer, Leonard, Lt. Comdr., MC, USN, 130 West 12th St., New York 11, N. Y.
- Carpenter, Lorne E., Toronto Psychiatric Hospital, Toronto, Ont., Canada.
- Carra', Angelo D., 1st Lt., MC, Veterans Admin. Facility, Northport, L. I., N. Y.
- Cattell, James P., Capt., MC, General Hospital, Camp Edwards, Mass.
- Chernus, Jack, 443 Belmont Ave., Newark, N. J.
- Cinder, Julius, Veterans Admin. Facility, Canandaigua, N. Y.
- Condon, Daniel, Lt. Comdr., MC, USNR, 118 Prospect St., Reading, Mass.
- Cress, Charles H., Jr., 1st Lt., MC, 1262 SCU Separation Center, Ft. Dix, N. J.
- Damm, Walter P., State School for Feeble-minded, Redfield, S. Dak.
- Dean, Edward Stratton, USPHS Hospital, Lexington, Ky.
- Donovan, Patricia, 121 Westchester Ave., White Plains, N. Y.
- Dryer, Raymond B., Lt. Comdr., MC, Poynette, Wis.
- Dunsmore, Nembrandt H., Northington General Hospital, Tuscaloosa, Ala.
- Dunsworth, Francis A., 168 Harrington St., Halifax, N. S., Canada.
- Eberhart, John J., Comdr., MC, USNR, U. S. Naval Hosp., Charleston, S. C.
- English, James B., Lt., MC, USNR., U. S. Naval Hosp., Newport, R. I.
- Feldman, Fred, 1st Lt., MC, Quarters 7-180, Camp Upton, N. Y.
- Fidler, Jay W., Jr., 1st Lt., MC, Convalescent Hosp., Ft. Story, Va.
- Friedman, Arnold P., Montefiore Hosp., New York 67, N. Y.
- Geller, Joseph J., Mason General Hospital, Brentwood, N. Y.
- Gibbons, Robert J., 1st Lt., MC, Northington General Hosp., Tuscaloosa, Ala.
- Greasen, Thomas L., Lt. Comdr., MC, U. S. Naval Hospital, Bethesda, Md.
- Groom, Dale L., Lt. (jg), MC, U. S. Naval Hosp., Rancho Santa Marguerita, Oceanside, Calif.
- Gundle, Sigmond, 1st Lt., MC, Mason General Hosp., Brentwood, L. I., N. Y.
- Hague, James D., Lt., MC, USN, 435 N. Henrietta Rd., Rochester 7, N. Y.
- Hamilton, Henry J. N., 1st Lt., MC, Woodrow Wilson General Hosp., Staunton, Va.
- Hare, James, Lovell General Hospital, Ft. Devens, Mass.
- Hendricks, Roger C., Lt., MC, U. S. Naval Hospital, Chelsea, Mass.
- Hermann, Maurice E., Veterans Admin. Facility, Northport, L. I., N. Y.
- Hesser, Frederick H., Duke Hospital, Durham, N. C.
- Horton, William D., Lt., MC, USNR, U. S. Naval Tr. Station, Newport, R. I.
- Kaplan, Max B., Capt., MC, Station Hospital, Indiantown Gap, Pa.
- Kapp, Frederic T., General Hospital, 3100 Burnet Ave., Cincinnati 29, Ohio.
- Kezur, Edward, Capt., MC, ASF Conv. Hosp., T-176, Camp Upton, N. Y.
- Kreigman, George, St. Elizabeth's Hospital, Washington, D. C.

- Laufer, Maurice W., Mayo General Hospital, Galesburg, Ill.
- Laughlin, Henry P., U. S. Naval Hospital, San Leandro, Calif.
- Madow, Leo, 1st Lt., MC, SCU 1101, Convalescent Hosp., Camp Edwards, Mass.
- Manganiello, Louis O. J., Lt. (jg), MC, U. S. Naval Hosp., New River, N. C.
- Marasse, Henry F., 1st Lt., MC, Mason General Hosp., Brentwood, N. Y.
- Margulies, Murray E., Capt., MC, APO 726, c/o PM, Seattle, Wash.
- Marshall, Thomas M., U. S. Naval Hospital, Bainbridge, Md.
- Mills, John W., U. S. Naval Hospital, San Diego, Calif.
- Nixon, Charles E., Lt. Col., MC, Fletcher General Hospital, Cambridge, Ohio.
- Norris, Charles B., Lt., MC, USNR, U. S. Naval Hospital, Portsmouth, Va.
- Pfeffer, Arnold E., USPHS Hospital, Lexington, Ky.
- Reisman, Saul J., Maj., MC, 1 Fifth Avenue, New York, N. Y.
- Richmond, Marion B., USPHS Hospital, Ft. Worth, Tex.
- Robinson, Samuel W., Lt., MC, USNR, U. S. Naval Hospital, Shoemaker, Calif.
- Rudnick, Herman D., LaGarde General Hospital, New Orleans, La.
- Sager, Clifford J., Capt., MC, Regional Hospital, Camp Shelby, Miss.
- Salzman, Leon, St. Elizabeth's Hospital, Washington, D. C.
- Schuster, Daniel B., Lt., MC, USNR, U. S. Naval Hospital, Memphis, Tenn.
- Schwartz, Morris, Capt., MC, 97th General Hosp., APO 647, c/o PM, New York, N. Y.
- Simms, Leon M., 1st Lt., MC, Redistribution Station, Hot Springs, Ark.
- Simon, John L., 167 East 82nd St., New York 28, N. Y.
- Sinclair, William J., Deer Lodge Hospital, Winnipeg, Man., Canada.
- Sobel, Raymond, Maj., MC, Hq. 34th Inf. Div., APO 34, c/o PM, New York, N. Y.
- Sobey, Victor M., 1st Lt., MC, Darnall General Hospital, Danville, Ky.
- Solomon, Seymour J., Station Hospital, Camp Roberts, Calif.
- Sovine, Joe W., Lt. Comdr., MC, USNR, 5714 Waverly Ave., La Jolla, Calif.
- Stern, J. Edward, Lt., MC, USNR, USN AB PD, 8 Co. Div., San Bruno, Calif.
- Stevens, Harold, St. Elizabeth's Hospital, Washington, D. C.
- Stone, Wayne B., Lt., U. S. Naval Prison, Portsmouth, N. H.
- Swan, Eugene L., Baldpate, Inc., Georgetown, Mass.
- Switzer, Robert E., Lt. (jg), MC, USNR, U. S. Naval Hospital, San Diego, Calif.
- Tarrasch, Hertha, 1930 Chestnut St., Philadelphia, Pa.
- Taub, Norman, Capt., MC, APO 503, c/o PM, San Francisco, Calif.
- Tucker, Weir M., Capt., MC, Newton D. Baker General Hosp., Martinsburg, W. Va.
- Turner, Robert C., USN Base Hosp. 17, Navy 3115, FPO, San Francisco, Calif.
- Warfel, Martin C., Northington General Hospital, Tuscaloosa, Ala.
- Warner, Nathaniel, Lt. (jg), MC, USNR, U. S. Naval Hospital, St. Albans, N. Y.
- Weissman, Philip, 1125 Park Avenue, New York, N. Y.
- Weitzner, Hyman G., 70 East 77th St., New York 21, N. Y.
- Wheelis, John M., Jr., Chestnut Lodge Sanitarium, Rockville, Md.
- Wright, George J., Jr., 1st Lt., MC, Northington General Hosp., Tuscaloosa, Ala.
- Zwick, Isidore, Rancho Los Amigos, Hondo, Calif.
- MEMBERSHIP, MAY 1945
- Abrams, Alfred L., Hq. Field Artillery Repl. Tr. Center, Ft. Bragg, N. C.
- Adams, Hayford K., Lakeside Lodge, Skillman, N. J.
- Alexander, Julius S., Peoria State Hospital, Peoria 7, Ill.
- Allen, Adam G., Maj., MC, Veterans Admin. Facility, Coatesville, Pa.
- Allison, Robley C., Maj., MC, 117th Evac. Hosp., APO 1740, c/o PM, New York, N. Y.
- Anderson, Charles L., Harding Sanitarium, Worthington, Ohio.
- Anderson, Edward S., 1206 State Office Bldg., Columbus 16, Ohio.
- Anderson, John M., Milledgeville State Hospital, Milledgeville, Ga.
- Apter, Abraham H., Capt., MC, 1570th Service Unit Sec. 5, Camp Breckenridge, Ky.
- Badel, Daniel W., 640 South Kingshighway, St. Louis 10, Mo.
- Bagenstose, Clinton H., Lt. Comdr., MC, USN, U. S. Naval Hospital, Philadelphia, Pa.
- Bailey, Allan A., Maj., MC, 26 Lakeside Ave., Ottawa, Ont., Canada.
- Bankert, Charles W., Maj., MC, Veterans Admin. Facility, Batavia, N. Y.
- Barbara, Dominick A., Central Islip State Hospital, Central Islip, N. Y.
- Baur, Alfred K., St. Elizabeth's Hospital, Washington 20, D. C.
- Beach, Kenneth H., 722 West 168th St., New York, N. Y.
- Beall, Louis G., State Hospital, Morgantown, N. C.
- Bendheim, O. L., Capt., MC, Wm. Beaumont General Hosp., El Paso, Tex.
- Berezin, Martin A., Lt. Col., MC, Station Hospital, Camp Polk, La.
- Berger, Louis M., Capt., MC, Veterans Admin. Facility, Wood, Wisc.
- Bergmann, Jerome W., Capt., MC, Regional Hosp., Ft. Riley, Kans.
- Bernstein, Isidor, Capt., MC, ASF Convalescent Hosp., Camp Upton, N. Y.
- Bialock, John F., Jr., Capt., MC, 2906 San Miguel St., Tampa, Fla.

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- Bielinski, Brunon, Capt., MC, Torney General Hosp., Palm Springs, Calif.

Bierhoff, Joseph, 315 Cherry St., San Francisco 18, Calif.

Bird, Ivan F., Capt., MC, Station Hospital, Ft. Leavenworth, Kans.

Bloomfield, Maxwell I., 721 Walton Ave., Bronx 51, N. Y.

Bloss, Charles L., 1st Lt., MC, Percy Jones General Hosp., Battle Creek, Mich.

Blumstein, Alex, Maj., MC, AAF Regional Hospital, Santa Ana, Calif.

Bradley, John D., Highland Hospital, Asheville, N. C.

Brady, Emory J., Lt., MC, USNR, U. S. Naval Hosp., Philadelphia, Pa.

Breckin, Nathaniel J., 114 East 54th St., New York 22, N. Y.

Brown, Charles A., Maj., MC, Station Hosp., Maxwell Field, Ala.

Brusca, Donald D., Capt., MC, Mason General Hosp., Brentwood, N. Y.

Burdine, Winston E., Capt., MC, AAF Conv. Center, Con Ce Sar Pl., St. Petersburg, Fla.

Burrows, Ernest A., 822 Broadway, East Providence, R. I.

Buscaglia, Chris J., Mason General Hospital, Brentwood, N. Y.

Cahill, Ella P., 100 Nashua St., Boston, Mass.

Carroll, R. Charman, Duke Hospital, Durham, N. C.

Center, Abraham H., Capt., MC, Veterans Admin. Facility, Tuscaloosa, Ala.

Chappell, Ewin S., Maj., MC, U. S. Disc. Barracks, Ft. Leavenworth, Kans.

Chodoff, Paul, Capt., MC, AAF Regional Hosp., Langley Field, Va.

Cibelli, Louis A., Maj., MC, Veterans Admin. Facility, Roanoke, Va.

Cirolli, Dominic T., 333 Linwood Ave., Buffalo, N. Y.

Clark, Charles E., Norwich State Hospital, Norwich, Conn.

Clarke, Robert, University Hospital, Ann Arbor, Mich.

Cobliner, Lilli H. M., 178 East 70th St., New York 21, N. Y.

Cohen, R. Robert, Lt. Col., MC, Aberdeen Proving Ground, Md.

Console, William A., Lt. Comdr., MC, USNR, School of Aviation Medicine, Pensacola, Fla.

Cottrell, Lillian, Health Service, Univ. of Minn., Minneapolis, Minn.

Cox, Clarence C., Milledgeville State Hospital, Milledgeville, Ga.

Crisp, Allan C., 160 Bloor St., W., Toronto, Ont., Canada.

Dancik, Daniel, Capt., MC, 129 Broadway, Huntington Station, N. Y.

Deichelmann, Stephen J., Dufur Hospital, Ambler, Pa.

D'Elseaux, Frank C., 37 Marlborough St., Boston, Mass.

Diamond, Leon S., Capt., MC, Veterans Admin. Facility, American Lake, Wash.

Doan, Duaine I., Capt., MC, Veterans Admin. Facility, Palo Alto, Calif.

Doles, James W., Maj., MC, Veterans Admin. Facility, Knoxville, Iowa.

Duffy, Ruth E., Devereux Schools, Devon, Pa.

Eadie, Gordon A., Eastern Aircraft, Linden, N. J.

Eaton, Lealdes M., Mayo Clinic, Rochester, Minn.

Emanuele, Louis J., 1747 Mahan Ave., Bronx 61, N. Y.

Engle, Eva H., 3 East 74th St., New York, N. Y.

Faber, Max, Maj., MC, Separation Center, Camp Atterbury, Ind.

Fabian, A. A., 15 East 10th St., New York 3, N. Y.

Farber, Leslie H., U. S. Marine Hospital, Norfolk, Va.

Feichtinger, Frederic, 75-2 Fourth Ave., Brooklyn, N. Y.

Feldman, Raymond, Capt., MC, Veterans Admin. Facility, Tuscaloosa, Ala.

Finch, Stuart M., 1st Lt., MC, Regional Hosp., Camp Maxey, Tex.

Fincle, Louis P., Capt., MC, Ft. Devens, Ayer, Mass.

Fisher, Charles, 22 East 80th St., New York, N. Y.

Fortescue, Thomas A., Capt., MC, U. S. Naval Tr. Center, Sampson, N. Y.

Franklin, Charles M., Lt. (jg), MC, Courthouse Bay, Camp Lejeune, New River, N. C.

Friedman, Emmanuel D., 1192 Park Avenue, New York 28, N. Y.

Gage, Maxwell, Mason General Hospital, Brentwood, N. Y.

Gendreau, Louis P., Maj., RCAMC, Army Reception Center, Cove Field, Que., Canada.

Gershman, Harry, Central Islip State Hospital, Central Islip, N. Y.

Gerty, Alvin V., 595 East Colorado St., Pasadena, Calif.

Gilbert, Louis J., Bureau of Child Guid., 139 West 130th St., New York, N. Y.

Gladen, Ralph G., Capt., MC, Station Hospital, Biggs Field, Tex.

Gold, Henry R., 471 Park Avenue, New York, N. Y.

Goldin, Morris I., Capt., MC, U. S. Disc. Barracks, N. Camp Hood, Tex.

Goldschmidt, K. Heinz, Peoria State Hospital, Peoria, Ill.

Good, Ella I. Duff, 242 Regent St., Fredericton, N. B., Canada.

Gordon, Hirsch L., Capt., MC, Veterans Admin. Facility, Northport, L. I., N. Y.

Gordy, Louis J., Seagoville Internment Camp, Seagoville, Tex.

Grain, Gerald O., Henry Ford Hospital, Detroit 2, Mich.

Grana, Philip C., A. F. Induc. Station, 5th Regt. Armory, Baltimore, Md.

Grassi, Michael O. A., Capt., MC, APO 565, c/o PM, San Francisco, Calif.

Gruenwald, Frances, State Hospital, Independence, Iowa.

Gruenwald, Siegfried, State Hospital, Independence, Iowa.

- Guensberg, Marcus, Manhattan State Hospital, Wards Island, N. Y.
- Hamilton, Reginald C. M., Maj., RCAMC, Hq. Pacific Command, Vancouver, B. C., Canada.
- Handzel, Valerie, Rockland State Hospital, Orangeburg, N. Y.
- Hanus, Joseph J., Capt., MC, Veterans Admin. Facility, Chillicothe, Ohio.
- Harris, Frank H., Capt., MC, Wakeman General Hosp., Camp Atterbury, Ind.
- Harris, Herbert I., Lt. Comdr., MC, U. S. Naval Hospital, Chelsea 50, Mass.
- Harris, Thomas A., Lt. Comdr., MC, Haven Detail NTS, Newport, R. I.
- Hartmann, Dora, 1150 Fifth Avenue, New York, N. Y.
- Hasenbush, Lester L., Lt. (jg), MC, U. S. Naval Hosp., Astoria, Ore.
- Heinz, Dorothy C. V., 141 S. Meridian St., Indianapolis, Ind.
- Hewitt, Robert T., USPHS Hospital, Lexington, Ky.
- Hilgard, Josephine R., Chestnut Lodge Sanitarium, Rockville, Md.
- Hines, Paul, 1300 Grant Road, Webster Groves 19, Mo.
- Hirschfeld, Gerhard, Institute of Living, Hartford, Conn.
- Hirschfield, Bernard A., Maj., MC, General Hospital, Ft. Lewis, Wash.
- Hogeboom, Willard L., Lt. Comdr., USN, Gowanda State Homeo. Hosp., Helmuth, N. Y.
- Horn, Leo N., Lt., MC, U. S. Navy Recruiting Station, Hattiesburg, Miss.
- Houze, Harry G., Westport Sanitarium, Westport, Conn.
- Hoye, Clara L., St. Elizabeth's Hospital, Washington, D. C.
- Hubbard, Edinburgh M., Jr., 10th and Chestnut Sts., Louisville, Ky.
- Hubbs, Roy S., Lt. Col., MC, 5th Repl. Depot, APO 711, c/o PM, San Francisco, Calif.
- Ivey, Evelyn P., Picatinny Arsenal, Dover, N. J.
- Jacobs, Louis, National Tr. School for Boys, Washington, D. C.
- Jacoby, Ralph B., Pilgrim State Hospital, Brentwood, N. Y.
- Kaplan, Killian K., 310 East 75th St., New York, N. Y.
- Kashe, Leo H., 1st Lt., MC, Veterans Admin. Facility, Northport, L. I., N. Y.
- Kazan, Avraam T., Capt., MC, Peterson Field, Colorado Springs, Colo.
- Keller, George F., Maj., MC, Veterans Admin. Facility, Portland, Ore.
- Kennedy, William F., Capt., MC, USN, Bur. of Medicine and Surgery, Washington, D. C.
- Kessler, Morris M., Station Hospital, Camp Patrick Henry, Va.
- Kornreich, Carl J., 779 East 176th St., New York, N. Y.
- Kowalski, Louis J., Phila. State Hospital, Philadelphia 14, Pa.
- Lange, Hanna, Creedmoor State Hospital, Queens Village, N. Y.
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REINSTATEMENT AS A MEMBER,  
 MAY 1945

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 burgh  
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 Hosp.  
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 Hunt  
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## CORRESPONDENCE

### NATIONAL PSYCHOPATHIC HOSPITAL, PHILIPPINES

In the last issue of the JOURNAL was published a letter from Dr. Jose A. Fernandez, Supervising Alienist of the National Psychopathic Hospital at Manila, describing the desperate plight in which he and his hospital were left as a result of Japanese occupation, looting and destruction.

Some two decades ago Dr. Fernandez spent two years at the Boston Psychopathic Hospital and had training under Dr. Karl M. Bowman. In a recent letter to Dr. Bowman he writes:

During the three years of Japanese occupation, two-thirds of our hospital was occupied by the Japanese and they took everything the hospital had, beds, clothes, laboratory equipment, instruments, etc.

When the Americans liberated us last February 9, 1945, the Japanese destroyed our library, killed patients and employees and burned buildings, including our homes. . . . Manila is a heap of ruins and a grave-yard.

Words cannot express our gratitude for the help you and the American people have given and are still giving us here in the Philippines. Our government is so full of problems that we cannot ex-

pect much help for some time. The United States Army is the one feeding us.

Dr. Bowman has submitted for publication the following statement:

"Dr. Fernandez and several other Philippine doctors had their psychiatric training at Harvard Medical School and the Boston Psychopathic Hospital. Personally, I have sent Dr. Fernandez a small check and some reprints and books. I believe that many of our members would be glad to make some contribution to the restoration of the National Psychopathic Hospital of the Philippines and to help the psychiatrists who have suffered at the hands of the Japanese. An immediate contribution will be of greatest value, and it is my hope that many of our members will contribute either money, books or equipment. I would suggest that all such material be sent directly to Dr. Jose A. Fernandez, Supervising Alienist, National Psychopathic Hospital, Mandaluyong, Manila, Philippines."

## COMMENT

### PRESIDENT'S LETTER

It has finally become necessary to cancel the annual meeting which had been scheduled for August in Chicago. As has been publicly announced, the Government is preparing to send troops to the west coast and transportation facilities will be more overtaxed by military needs than ever before. It is estimated that August will see the peak of this condition. An investigation made by Mr. Davies indicated that there was no possibility of our securing the consent of the Government for a meeting in August, and little or no likelihood of such consent being obtained for the rest of the year. For this reason, the Executive Committee, at its meeting of June 4, voted that the annual meeting should not be held during 1945 and that we plan to hold the next annual meeting in May 1946 in Chicago. As provided by the Constitution, officers will hold over until their successors have been chosen. It seemed to the Executive Committee that this was the only way of handling the matter. I regret very much that transportation conditions were such that it was impossible for me to attend this meeting of the Executive Committee.

Certain financial difficulties are raised by this decision, such as refunding money on contracts for commercial exhibits, and also the special advertising contracts for the July-August issue of the JOURNAL. Mr. Davies is working hard on these matters and will straighten them out.

The program committee has been seriously embarrassed by the situation. It should be pointed out that when the Council met in March, the best information available indicated that it would be possible to hold the annual meeting, and the program committee was informed of this decision. Cancellation of the meeting will undoubtedly be a disappointment to many who have submitted papers, and I regret that the final announcement could not be made earlier. Only once before in its hundred years has The Ameri-

can Psychiatric Association failed to hold an annual meeting and this was during the War Between the States, for somewhat similar reasons.

The entertainment committee has also gone to a great deal of trouble in making plans for the meeting and the Association is greatly indebted to them for their efforts. This work will not be entirely wasted as we anticipate holding the meeting in Chicago next May.

Our members are entitled to some report as to what actions have been taken by the Council and by the Executive Committee, and as to what has been accomplished by special committees. I have asked Dr. Overholser to prepare, if possible, a condensed report of the meetings of the Council and Executive Committee, which I hope will also appear in the July-August issue.

I would like to refer to the committee on reorganization. It seems unfortunate that the impression has gotten about rather generally that the reorganization committee will increase the dues of the Association and radically alter the organization. I have had a great many letters from members protesting such action. I would again like to make clear to our members that the committee on reorganization has no power whatsoever to raise the dues or to alter the Constitution of the Association or, in fact, to do anything except to make an investigation of the organization of the Association and to report back to the Council and the Association the result of this investigation together with any recommendations they wish to make. The Council itself cannot make changes in the Constitution. These can be made only by written notice beforehand and by a vote of the Association at its annual meeting. Nor does the Council have any authority to raise the dues; it may recommend a raise but dues can only be changed by vote of the Association at the annual meeting. I hope this will make the situation clear and

allay the fears of any who have felt that some new plan was about to be put into effect without the Association passing on the matter.

It has interested me greatly to note the wide differences of opinion expressed by our members in their letters to me. Some favor a radical reorganization. Some are opposed to any change whatsoever and a few seem fairly indifferent to the situation. A number of members have expressed the fear that the Association might be stampeded into some undesirable plan by a small but highly vocal minority. I believe that the procedure being followed by the committee is well designed to prevent such a thing occurring and it is my hope that members who have not done so will take advantage of this opportunity to write the committee, giving their views on this matter of reorganization. From the letters I have received, I believe that the group wishing to preserve the status quo are fully as insistent on making their opinions known as are the group who wish some radical reorganization. I am not in the least disturbed by these differences of opinion. I regard them as the sign of a healthy condition in our Association, and if I found that everyone agreed completely about everything I would start worrying about the Association's future.

One problem that has never been adequately dealt with is our plan for sections. At present we have four sections: (1) convulsive disorders (2) forensic psychiatry; (3) psychoanalysis; (4) psychopathology of childhood.

It seems to me there should be room within the Association for the formation of additional sections, and this might well serve to prevent a development of so many new societies which are being organized, and better serve the interests of groups interested in special subjects.

The American Orthopsychiatric Association was apparently organized because there was a large group doing child psychiatry who were not eligible for membership in our Association. This vigorous and flourishing organization with a journal of its own, has a considerable membership from psychiatric social workers and psychologists.

Our section on psychopathology of child-

hood was until recently a section on mental deficiency. There is already a national association organized around the problem of mental deficiency.

We have a section on psychoanalysis and there exists also the American Psychoanalytical Association.

We have a section on convulsive disorders and there are two national associations dealing with this problem.

We have a section on forensic psychiatry and there are numerous organizations dealing in part with this subject.

We do not have any section dealing specifically with: (1) therapy, including psychotherapy; (2) alcohol; and (3) psychosomatic medicine.

Recently, a national society on psychosomatic medicine was organized, with a publication of its own. Should we consider organizing a section on this subject in our own society? One year we held a joint meeting in one of our sections with the American Association of Psychosomatic Medicine. This was comparable to the meetings which were held by the section of psychoanalysis with the American Psychoanalytical Association.

Should we have a section on alcohol? Already we find a number of groups organized around this problem. Leaving out Alcohol Anonymous, which appears to be developing by leaps and bounds and which is made up of reformed alcoholics, there is the Research Council on Problems of Alcohol, which is the oldest of these organizations, which has sponsored a number of important meetings and has provided funds for a good deal of worth while research. The Yale School of Alcohol Studies, closely linked with the *Quarterly Journal of Studies on Alcohol*, represents a second effort to deal with these problems. The *Quarterly Journal of Studies on Alcohol* has achieved tremendous success and is filled with valuable articles and excellent reviews of current literature. Two clinics have even been sponsored by the Yale School. Recently, there has been organized the National Committee for Education on Alcoholism. This Committee was organized in September 1944 and is designed primarily for the education of the public. It also furthers the founding

of clinics along the so-called Yale Plan. There was also founded in September 1944 the National Committee on Alcohol Hygiene, with headquarters in Baltimore, Maryland. Quoting from its announcements: "The purpose of this group of medical workers is to disseminate scientific information to the public through various educators on the subject of alcoholism, with the primary view of educating individuals and the community about alcoholism—as distinguished from social drinking—and the significance of this medical-social problem in its effect on and its relation to both the individual and the community."<sup>1</sup>

Here, then, are three national organizations, perhaps we should say four, carrying on very similar activities. We are asked to consider what would be the effect of a section on alcohol in The American Psychiatric Association. Would this dilute the work still more? Would it make unnecessary any of the present organizations or, by working with some or all of them and possibly having them meet at the time of our annual meeting, would there be something of value to all of those involved?

#### NAZI MENTALITY

The work of that German-spawned monster—Nazism—has been revealed in all its horrid details in the various concentration camps where Hitler-minions, including doctors, systematically practiced on their victims a studied policy of neglect, starvation, torture and extermination.

A first-hand view of the effects of this incredible savagery is supplied in a report of Dr. W. R. F. Collis, a Dublin physician, on the "Horror Camp" at Belsen (B.M.J., June 9, 1945). This preliminary report, which the

<sup>1</sup> I wish to quote, in part, from a letter from Dr. Robert V. Seliger:

"I read with interest your notes on alcohol in the current issue of the *American Journal of Psychiatry* on page 525.

"I do not feel that you properly reported both the members of our National Committee and also our purposes. Under separate cover we are sending some of our recent material which may perhaps help in advising you in a little more detailed form and greater exactness the facts regarding our Committee.

"We do not feel, from your statements, that scientists and psychiatrists will be able to differ-

When we come to the problem of therapy, we find the same sort of thing. There is now published the *Journal of Clinical Psychopathology*, which is the official organ of the Association for the Advancement of Psychotherapy. On January 12 and 13, 1945, the American Group Therapy Association met in New York. There has been an attempt to organize an association on shock therapy. There again it seems that we should consider what would be the advantages and disadvantages of one or more sections on therapy in our own Association.

One question of great importance does not seem to have been adequately answered. Do we wish to have other associations more or less affiliated with us? At the time of our meeting, the American Psychoanalytical Association has met in this manner. At times, the American Association for the Study of Mental Deficiency has also met with us. It would seem that this is a question that requires a good deal of study and one which the committee on reorganization might well consider.

KARL M. BOWMAN.

author says is a "complete understatement," is so shocking that it overtaxes imagination to grasp the reality. To dispose of the dead, salvage what could be saved of the living remnants and blot out with fire the disease-ridden nest was the task of the Royal Army Medical Corps, with collaboration of allied services, the Red Cross, doctors from Switzerland. "No words," writes Dr. Collis, "can describe the stench of decaying faeces, rotting bodies and burning rags, which in the first weeks [after the R. A. M. C. took

entiate that the New York National Committee for Education on Alcoholism, Inc., is more or less of a lay group and for lay education, while our group, The National Committee on Alcohol Hygiene, Inc., is a group of scientists gathering and putting together and also doing research for educational purposes, to be disseminated through scientists and educators. We further feel that one perhaps would misinterpret your statement and feel that it is a local Baltimore group rather than a national group; your statement 'sponsored largely by Baltimore Doctors, psychologists and social workers.' . . .

"I trust that you can see your way clear to correcting the above after reading this letter."

over] one could begin to smell miles from the camp."

In the Belsen Horror Camp were crowded together 40,000 "emaciated apathetic scarecrows [18,000 males, 22,000 females] . . . without any clothing whatsoever in some cases. The females in worse condition than the men, their clothing generally, if they have any, only filthy rags." Some 8,000 to 10,000 naked decomposing corpses lay all over the camp. There was no running water and sanitation was non-existent. "The majority of inmates, from starvation, apathy and weakness defecate and urinate where they sit or lie, even inside the living huts. . . . Death came chiefly through starvation, typhus, tuberculosis and dysentery: 500 a day were dying from disease, and the guards killing more . . . patients were often given intravenous infusions of benzol and creosote by the German *medical staff*"

to produce paralysis as a foretaste to the crematorium.

Words are inadequate to describe Nazi degeneracy or to pay tribute to the officers and men, the doctors and nurses (including internee doctors and nurses), the medical students and medical corps personnel, who, often at serious cost to their own health, have cleaned up this foul place.

The *British Medical Journal* comments editorially that while it would be an error to suppose that all German doctors are of the Belsen breed, nevertheless "it will be some time before we can look upon German doctors as men imbued with the ideals of medicine common to civilized countries—ideals so magnificently sustained by the British doctors, nurses, medical students and orderlies now cleansing this Augean stable of Nazi horror."

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## NEWS AND NOTES

**MICHIGAN DEPARTMENT OF MENTAL HEALTH.**—Legislative action in Michigan taken at the 1945 regular session provides for a change in the administrative organization of what is currently known as the State Hospital Commission, the department responsible for the administration of the mental health program.

The name of the department is changed to "Department of Mental Health."

A five member, policy determining commission is created, to be appointed by the Governor. The commission and the Governor are authorized to appoint a director of mental health for a six-year term. The director shall be a physician legally registered in the State of Michigan with at least ten years' experience as a psychiatrist in the treatment of mental diseases, administration of mental hospitals and mental health programs.

The administration of the department is divided into three major divisions: Business Administration, Hospitals and Mental Hygiene. The head of one of the three divisions shall be designated as deputy director of the department.

The new law will become effective September 7, 1945.

**GRADUATE PSYCHIATRIC NURSING AT MCGILL.**—McGill University, through its School for Graduate Nurses, has established a one year post-graduate course leading to a certificate in psychiatric nursing.

The course begins in September, 1945. It will be open to graduate nurses eligible to matriculation in the university who have had sufficient experience in psychiatric nursing to indicate an interest in and adaptability to such work. The course is designed primarily to provide advanced training for those nurses planning to undertake supervisory, administrative and teaching responsibilities.

The academic programme will be provided in the University, and the clinical programme through The Allan Memorial Institute of Psychiatry, and other approved hospitals.

**NEW PSYCHIATRIC CLINIC FOR THE UNIVERSITY OF ROCHESTER.**—A recent magnifi-

cent gift by Mrs. Helen Woodward Revas of New York City and LeRoy, New York is earmarked for the establishment of a psychiatric clinic as a unit of the School of Medicine, University of Rochester. A part of this fund is designated for the construction and equipment of buildings and a trust fund is to be set aside for operation and maintenance of the clinic. It is understood that this clinic will be primarily for the study and care of the functional disorders, with emphasis on the ambulatory case.

A committee of the faculty is now formulating plans in order that construction may be begun as early as conditions permit. With the new clinic staffed and in operation it is anticipated that a department of psychiatry will be set up under a full professorship.

**OPENINGS IN PSYCHIATRY AT PHILADELPHIA GENERAL HOSPITAL.**—The Philadelphia General Hospital, division of psychiatry, has announced the availability of two positions as assistant to the head of the psychopathic division. The salary begins at \$3,200.00 a year, plus maintenance for the physician (his family would not be included). The salary increases each year up to \$3,600.00. As a rule preference will be given to physicians who have served in the armed services in neuropsychiatry.

The minimum qualifications of applicants, as stated in the announcement are: education equivalent to graduation from a medical school of recognized standing; license to practice medicine in the State of Pennsylvania; at least two years successful experience in neurology and psychiatry; demonstrated analytical ability; supervisory and administrative ability; ability to meet with the public; sympathetic understanding of the mentally sick; tact; pleasing personality; thoroughness; good judgment; good health.

**STERILIZATION OPERATIONS IN CALIFORNIA.**—The Statistical Report of the Department of Institutions of the State of California for the year ending June 30, 1944 shows a cumulative total of 16,517 sterilization operations (8,387 males, 8,130 females).

The number of operations performed in 1943-44 (397) was 137 fewer (26%) than in 1942-43. Of the 1943-44 operations 59.4% were performed on women, 40.6% on men. Of the total for the year 44.8% were done in mental hospitals, 55.2% in institutions for mental defectives.

**DR. COBB LECTURES AT MCGILL.**—Dr. Stanley Cobb, professor of neuropathology at the Harvard Medical School and psychiatrist to the Massachusetts General Hospital, delivered the tenth annual Hughlings Jackson Memorial Lecture at the Montreal Neurological Institute of McGill University, Montreal, Quebec, March 9, 1945. Dr. Cobb's subject was "Some Observations on Neurocirculatory Asthenia."

**DR. KINDWALL DIRECTS MILWAUKEE SANITARIUM.**—Announcement has been made of the appointment of Dr. Josef A. Kindwall as medical director of the Milwaukee Sanitarium at Wauwatosa, Wisconsin, to succeed the late Dr. Lloyd H. Ziegler. Dr. Kindwall is a graduate in medicine of the Johns Hopkins University and has had extensive experience in psychiatry and neurology both in the United States and England. For some years he has served on the staff of the Milwaukee Sanitarium as associate medical director.

**PROPOSED MENTAL HEALTH ACT, MICHIGAN.**—House Enrolled Act No. 204 introduced in the 63rd Legislature (1945) of the State of Michigan, provides for the creation of a department of mental health to supersede the previous state hospital commission. The new department will take over all the functions of the commission and carry on all its regular duties.

Within the department of mental health will be established a commission of five members to be appointed by the governor, with the advice and consent of the senate, for terms of five years. The commission and the governor will appoint a director of mental health for a term of six years who will be the chief executive officer of the department. The director must be a registered physician in the State of Michigan with at least ten years' psychiatric experience.

There will be three divisions in the new department, namely business administration, hospitals and mental hygiene. The director will appoint with the approval of the commission a head for each division, one of whom will be designated as deputy director. The director will also appoint medical superintendents for the state hospitals and state homes and training schools. These superintendents must be physicians registered in Michigan with at least three years' psychiatric experience. He will also appoint directors for child guidance clinics.

As an important feature of the new Act, it is provided that the medical superintendent of each institution shall be responsible for the employment of all assistants and employees thereof.

**AMERICAN RED CROSS CALLS FOR SOCIAL WORKERS.**—The American Red Cross needs 750 trained social workers at once for supervisory, administrative and staff positions in military hospitals, largely in the United States. New and higher salary schedules, ranging from \$170 to \$350 monthly, depending on education, experience and job assignment, have been adopted by the Red Cross, as have also annual increments and promotions. Quarters are provided, and if not available at the hospital, an additional allowance is made. Free uniforms are issued.

In addition 1,650 untrained and partially trained workers are needed to serve in the area of social case work under professional guidance. Salaries range from \$140 to \$200 monthly. The hospital program also calls for 600 recreation workers at monthly salaries of \$150 to \$325.

The project for which these 3,000 hospital workers are being recruited will continue for many years. Despite this, however, employment will be offered by the Red Cross to any qualified worker willing to serve a minimum of one year. Applications should be filed at the nearest Red Cross area office—North Atlantic Area, 300 Fourth Avenue, New York 10, N. Y., Eastern Area, 615 N. St. Asaph Street, Alexandria, Va., Southeastern Area, 230 Spring Street, N. W., Atlanta 3, Ga., Midwest Area, 1709 Washington Avenue, St. Louis 3, Mo., and Pacific

Area, 615 N. St. Asaph Street, Atlanta 3, Ga.

**GROSSENECK MANTICORES** is Grossnecks a school Edward to attend be held September provides the \$25 reg and \$15 for the psychiatry, publications Education Chicago

**AMERICAN RED CROSS**—Training in psychiatry for social workers will be provided by the Red Cross organizations, on the part of the person a school in psychiatry in case chothe consultants will be the responsibility of the Red Cross possessor of experience in therapy.

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Area, Civic Auditorium, Larkin and Grove Streets, San Francisco 1, Calif.

**GROSSMAN SCHOLARSHIP IN GENERAL SEMANTICS.**—The Institute of General Semantics is pleased to announce that Mr. David Grossman of Philadelphia has again given a scholarship in memory of his brother Edward, to provide funds for a psychiatrist to attend the August Seminar-Workshop to be held at the Institute from August 13 to September 1, 1945. This scholarship provides the tuition, with the exception of the \$25 registration fee required of all students, and \$100 for travel and living expenses during the seminar. Mr. Grossman would prefer that the scholarship be awarded to a psychiatrist from Philadelphia or that vicinity, but has not so limited his offer. Applications should be addressed to M. Kendig, Educational Director, 1234 East 56th Street, Chicago 37, Illinois.

**AMERICAN GROUP THERAPY ASSOCIATION.**—This Association announces that a Training Institute in Activity Group Therapy for Children is to be offered. Students will be recruited from social service agencies, clinics and hospitals with a view of organizing therapy groups in these institutions. Selection of students will be made on the basis of education, experience and personality qualifications. Graduation from a school of social work, a recognized degree in psychology or psychiatry and three years in case work of acceptable standard or psychotherapy with psychiatric participation or consultation are required. Some students will be permitted to join who may not have the required educational qualifications but possess special personality attributes and experience that qualify them to do group therapy.

The Institute will be held in New York and will extend for 12 to 14 hours a week. The Association stresses that it would like to have students come from cities within four hours' travel from New York City, as well as from local institutions.

The tuition fee will be from \$250 to \$300 a year. The program would be so arranged that students would absent themselves only one day from their agencies.

Information may be had from George Holland, Esq., secretary-treasurer, 228 E. 19th St., New York 3, N. Y.

**AMERICAN SOCIOMETRIC ASSOCIATION.**—News has been received of the formation of this new Association, the purpose of which is stated to be "to provide a meeting point for the various social science associations as a center in which their mutual research interests can be promoted." Officers of the Association are: President, J. L. Moreno; Secretary, Helen H. Jennings; Treasurer, George A. Lundberg; Counsellors, Gardner Murphy, Ronald Lippitt and Zerka Toeman.

The secretary's address is—American Sociometric Association, Room 327, 101 Park Avenue, New York 17, N. Y.

**SOCIAL MEDICINE AT CREIGHTON UNIVERSITY.**—In the regular case conferences on psychosomatic medicine for senior students at the Creighton University School of Medicine, Omaha, Nebraska, the following points are particularly stressed: (1) That the emotions may produce disturbances in function, which without organic disease, may bring about true illness and incapacitate a patient just as completely as organic disease. (2) That it is the duty of the physician to understand the patient in relation to his environment. (3) That the physician is not fulfilling his obligation when he dismisses patients with the comment, "There is nothing wrong with you," and tags them with the label of a neurotic. (4) That a physician and a social worker must often cooperate both in securing information bearing on the patient's case and in carrying out treatment. (5) Particular emphasis is placed upon the fact that much needless surgery is done on patients whose symptoms are due to anxiety states and tensions rather than to organic disease. (6) That in such cases numerous operations serve only to accentuate the condition.

**EXPERIMENT IN CHILD CARE IN ENGLAND.**—During the past five years an interesting experiment has been conducted by the Chesterfield Education Committee, Chesterfield, England, in cooperation with the Institute of Child Psychology, London.

This project was designed as an attempt to combine the physical, intellectual and psychological approaches to children's problems. Provision was made in the Brambling House Open Air School and Children's Center for 125 children who are physically handicapped, emotionally maladjusted or suffering from specific learning disabilities; and admission was limited to those capable of improvement. From April 1939 to March 1944, 347 children passed through the center, 85 of whom attended the open air school where therapeutic treatment is part of the school routine. The remainder attended their own schools while receiving treatment at the center with a "child psychotherapist" maintaining close relationship with the home and the school. In 1943, the success of the experiment of associating the work of the centre and the school encouraged its extension and a "hostel" was acquired to provide residential treatment for certain of the children. Accommodation is provided for 18 children. The results of this experiment indicate the advantages that accrue from a setting wherein the child is part of a "secure group," where he is learning sound habits of work, and to accept responsibility for his own actions and behaviour, where he works at his own pace and is taught individually and encouraged to live a full and normal life.

**ST. LOUIS REHABILITATION CLINIC.**—The Veterans Readjustment Service, University Club Building, St. Louis, Mo., started to function on January 1, 1945. The staff consists of five psychiatrists, all volunteer workers, headed by Dr. Edwin F. Gildea, one full time paid psychiatric social worker, one part time psychiatric social worker and a paid secretary. Treatment has been restricted to brief psychotherapy by the psychiatrists. In cases wherein long periods of psychotherapy are indicated, the patient is referred to an appropriate clinic or agency. Community resources have been successfully organized to meet the needs of the patients.

**DR. TREADWAY GIVEN HONORARY DEGREE.**—On the occasion of its sixty-second annual commencement exercises, held on Saturday, June 23, 1945, the University of Southern California conferred the honorary

degree of Doctor of Science upon Dr. Walter L. Treadway, formerly Assistant Surgeon General (1929-38) and Medical Director (Retired) United States Public Health Service.

**HISTORY OF PSYCHIATRY IN THE NAVY.**—The following news item appeared in the May 26, 1945, issue of the *Journal of the American Medical Association*: "Capt. Forrest M. Harrison, chief of the neuropsychiatric division of the National Naval Medical Center, Bethesda, Md., was recently ordered to the Bureau of Medicine and Surgery on a special assignment to write the history of psychiatry in the Navy in World War II."

**SOMEWHERE IN THE PHILIPPINES.**—Colonel Samuel Alan Challman, M. C., chief neuropsychiatric consultant for the Southwest Pacific Area, in commenting on causes of psychiatric disorders in overseas areas and the outlook for the future of individuals diagnosed as psychoneurotic, said: "Soldiers who are today diagnosed as psychoneurotic are merely temporarily maladjusted and can be expected to resume their former health status in the great majority of cases after a few months of readjustment. The Colonel continued: "In addition to battle stress, which is widely understood, there is an indescribable strain associated with military life in a tropical environment. The strangeness, loneliness and seemingly endless monotony of the tropics result in a deficiency in the 'vitamins of mental health.' All normal people have nervous symptoms while such conditions prevail. Some are more sensitive to or concerned about these symptoms than others and must be returned to the United States for medicine of a 'richer life.' There are virtually no real neurotics in the Army today. Careful screening at induction stations keep them out."

Colonel Challman, whose home is in Minnesota, was recently promoted to the full rank of Colonel. He entered on active duty with the U. S. Army Medical Department in June 1941 and, before going overseas in February 1942, was assigned as chief of the neuropsychiatric service of the Lovell

General Hospital, Fort Devens, Massachusetts. His work as neuropsychiatric consultant in the Office of the Chief Surgeon, Hq. USASOS, Southwest Pacific Area, has taken him to virtually every base, military area and medical installation in Australia, New Guinea and nearby islands and the Philippines.

**CIVILIAN DYSPEPSIA.**—Jones and Pollak found that of 1522 patients referred to the dietetic clinic of a London General Hospital during 2 years (1943 and 1944) complaining of dyspepsia, 952 (59%) were suffering from peptic ulcer. The non-ulcer dyspepsias (41%) included a few cases of air swallowing or nervous vomiting and of various organic conditions other than ulcer. In the majority however no definite diagnosis could be made, but the authors state that in half this group the histories were suggestive of peptic ulcer. "Many of these dyspepsia cases seem to arise from the same factors that favour peptic ulcer—the rush and hurry of modern life, with its fatigue, worries, irregular meals, and nervous tension. . . . The intensity and duration of the stimuli may determine whether there is only irritability of the stomach or duodenum or a peptic ulcer is in process of formation."

From their observations and figures the authors estimate that about 1,500,000 living persons in England and Wales have suffered from peptic ulcer.

**MENTAL HEALTH LEGISLATION IN NORTH CAROLINA.**—The 1945 General Assembly of the North Carolina state legislature has ratified new mental health laws which completely do away with the antiquated, out-moded commitment laws that for so long have impeded psychiatric development in North Carolina.

Provisions of the 1945 mental health laws include the substitution of modern psychiatric terminology for the antiquated terminology used in the old laws, changes in the commitment regulations to provide for a 30-day observation period for all patients before final commitment can be made, the setting up of 10-day commitment in the event of psychiatric emergencies, modernization of the voluntary commitment regulations, a 30-day observation period for crimi-

nals, statutes which make it entirely unnecessary for psychiatric patients to be housed in jails, provisions for the commitment of residents of other states to the North Carolina state hospitals, and the setting up of a North Carolina Mental Health Council which will determine where the division of function lies between all agencies participating in all programs devoted to the mental health of the citizens of the state, and which would include in its membership representatives of all state agencies, professional societies, and medical schools which have any psychiatric responsibility.

We are indebted for this information to Dr. Maurice H. Greenhill, acting director of the department of neuropsychiatry, Duke University, who was appointed by the state to draft the new laws.

**WHAT IS "NEUROPSYCHIATRY"?**—"The term is an unfortunate one which was coined at the beginning of World War I. Psychiatry is an old specialty of recognized standing, a specialty of medicine which deals with disorders and distortions of the personality. Neurology likewise has long been known as a specialty and deals particularly with organic disorders of the central nervous system, such as infantile paralysis. Some organic changes of the central nervous system, such as result from sleeping sickness or from head injury, may cause disorders of the personality, but neurology is hardly much closer to psychiatry than are a great many other specialties. However this may be, the term neuropsychiatry has been officially adopted by the services and the Veterans Administration, and the abbreviation 'NP' is widely known. Actually the problem is nine-tenths psychiatry and one-tenth neurology."—WINFRED OVERHOLSER, M. D., *The National Legionnaire*. June, 1945.

**ILLINOIS PSYCHIATRIC SOCIETY.**—At the annual meeting of the Illinois Psychiatric Society held on May 5, 1945, the following officers were elected for the year 1945-46: Dr. John J. Madden, President; Dr. Frances Hannett, Vice-President; Dr. Charlotte G. Babcock, Secretary-Treasurer; Dr. David Slight, Councilor; Dr. Edward P. Ross, Councilor.

**VETERANS' MENTAL HYGIENE CLINIC, LOS ANGELES.**—A mental hygiene clinic has recently been established at the Veterans' Administration Facility, Los Angeles, California. The function of this clinic is to treat service-connected neuropsychiatric disabilities of World War II veterans. Chief Psychiatrist, Tracy C. Owens, Major, M.C.; Psychiatrist, Samuel Futterman, 1st Lt., M.C.

**VETERANS ADMINISTRATION FACILITIES.**—Hospitals operated by the Veterans Administration fall into three groups,—general medical and surgical, neuropsychiatric and tuberculosis hospitals. Institutions in each category are distributed throughout the country in order to facilitate access from veterans' home districts. There are 51 medi-

cal and surgical hospitals, 32 neuropsychiatric and 14 tuberculosis hospitals. The aggregate bed capacity of the Veterans Administration Facilities is above 80,000.

Neuropsychiatric Facilities are located as follows:

American Lake, Wash.	Mendota, Wisc.
Augusta, Ga.	Murfreesboro, Tenn.
Bedford, Mass.	Northampton, Mass.
Canandaigua, N. Y.	North Little Rock, Ark.
Chillicothe, Ohio	Northport, L. I., N. Y.
Coatesville, Pa.	Palo Alto, Calif.
Danville, Ill.	Perry Point, Md.
Downey, Ill.	Roanoke, Va.
Ft. Custer, Mich.	Roseburg, Oreg.
Ft. Lyon, Colo.	Shéridan, Wyo.
Ft. Meade, S. Dak.	St. Cloud, Minn.
Gulfport, Miss.	Togus, Maine
Knoxville, Iowa	Tuscaloosa, Ala.
Lexington, Ky.	Tuskegee, Ala.
Lyons, N. J.	Waco, Texas
Marion, Ind.	Wadsworth, Kans.

#### NOTICE TO PHYSICIANS INTERESTED IN PSYCHIATRY

The American Psychiatric Association is desirous of being of service to its members and to other physicians interested in psychiatry. The Association is particularly interested in making available "refresher courses" of about three months and also fellowships or residences of a year or more.

In order that appropriate plans may be made, it is urgently requested that physicians now in the armed forces who wish to avail themselves of such opportunities communicate with the Secretary, Dr. Winfred Overholser, Saint Elizabeths Hospital, Washington 20, D. C., indicating their desires.

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## BOOK REVIEWS

ONE HUNDRED YEARS OF AMERICAN PSYCHIATRY.  
Published for The American Psychiatric Association. (New York: Columbia University Press, 1944.)

This symposium, issued by an editorial board on which Drs. J. K. Hall, Gregory Zilboorg and Henry Alden Bunker served as, respectively, general editor, associate and assistant editor, commemorates the centenary of The American Psychiatric Association, founded on October 16, 1844, in Philadelphia as the "Association of Medical Superintendents of American Institutions for the Insane." Apart from a few prefatory pages by Dr. Zilboorg and Dr. Hall's Introduction, the book comprises fifteen essays of varying length and character. Two of the papers, Thomas Verner Moore's "A Century of Psychology in its Relation to American Psychiatry" (pp. 443-478) and Clyde Kluckhohn's "The Influence of Psychiatry on Anthropology in America during the Past One Hundred Years" (pp. 580-617) indicate relations with adjoining branches of science. Four consider the contacts of psychiatry with war and the law, viz., Albert Deutsch's "Military Psychiatry: The Civil War, 1861-1865" (pp. 367-384) and "Military Psychiatry: World War II, 1941-1943" (pp. 419-441); Edward A. Strecker's "Military Psychiatry: World War I, 1917-1918" (pp. 385-416); and Zilboorg's "Legal Aspects of Psychiatry" (pp. 507-584). Of the remainder, all concern themselves with psychiatry itself as the central theme. Delving into its prehistory, Richard H. Shryock sketches "The Beginnings: From Colonial Days to the Foundation of the American Psychiatric Association" (pp. 1-28) and Henry E. Sigerist characterizes "Psychiatry in Europe at the Middle of the Nineteenth Century" (pp. 29-43), while Winfred Overholser describes "The Founding and the Founders of the Association" (pp. 45-72). Samuel W. Hamilton outlines "The History of American Mental Hospitals" (pp. 73-166), William Malamud "The History of Psychiatric Therapies" (pp. 273-323), Albert Deutsch "The History of Mental Hygiene" (pp. 325-365), Henry Alden Bunker "Psychiatry as a Specialty" (pp. 479-505). From John C. Whitehorn's "A Century of Psychiatric Research in America" (pp. 167-193) and Henry Alden Bunker's "American Psychiatric Literature during the Past One Hundred Years" (pp. 195-271) the reader gains a notion of American contributions to theory and practice.

Doubtless a grouping might be made on other principles, but for purposes of this review the one here proposed may suffice.

Dr. Moore's scholarly contribution impresses me as "stimulating" in the proper sense of that much abused term. It would be presumptuous for an outsider to assess its several judgments, but the main contentions seem convincing. Dr. Moore

deprecates the earlier sensationalism and the more recent behaviorist fashion, but sympathetically surveys the child guidance movement. He does not mince matters in admitting the past failure of his guild to provide psychiatrists with a sound body of knowledge applicable to their problems. On the other hand, he finds that no psychiatric text in any language has adequately synthesized the findings of psychology and psychiatry (p. 448), and his essay culminates in the optimistic declaration that "There is a large body of experimental empirical research that has never been evaluated by psychiatry" (p. 477).

As an anthropologist I feel impelled to survey Professor Kluckhohn's contribution at greater length. It is remarkable for its erudition and replete with valuable references. Unfortunately it is marred by several inaccuracies and displays a propagandist's one-sidedness.

It is not true that "academic psychology has had a surprising minimum of influence upon anthropology" (p. 589), a statement inconsistent with Kluckhohn's commendable stress on the psychological interests of Franz Boas, far and away the most effective teacher of American anthropologists. Naturally psychological points of view are not to be sought in reports on museum accessions or of archaeological excavation. But Wissler, Kroeber, Radin, Wallis, Goldenweiser, Haeberlin, Lowie all devoted considerable time to psychology; most of them, for instance, manfully grappled with Wundt and James,—witness Goldenweiser's and Haeberlin's critiques of Wundt. Odd, indeed, is the singling out of the concept of the "sentiment" as virtually the only one taken over from psychology by the older anthropologists. What of the far more influential principle of individual variability that so powerfully vitalized field work?

Professor Kluckhohn roundly chides anthropologists for neglect of psychoanalysis, but even here he overshoots the mark. He thinks it strange that a paper on "Psychology and Sociology" published in 1915 in the *American Journal of Sociology* should not contain "a single allusion" to the subject; actually it specifically refers to Freudian wish-fulfilment (p. 221). Again, he makes much of the fact that my "Primitive Religion" (1924) mentions neither Freud, psychoanalysis nor psychiatry. The stricture reveals the strange dogma that content counts only if conventionally labeled. For the book in question does discuss at length individual variability and the relation of the individual to society, touches on such definitely psychiatric phenomena as transvestism, word associations and rationalization, and cites Jung.

On the other hand, we find fantastic overestimation of two fugitive publications by the late Edward Sapir: "It is doubtful that so small a number of pages has ever had such momentous consequences for anthropology" (p. 602). Sapir

was a great linguist and a superb ethnographer, but his *obiter dicta*, whether oral or printed, do not call for fetishistic adoration. I venture to say that the effect of these two papers has been insignificant: Kluckhohn confuses eloquent outlining of a programme with the precise definition of problems for solution. When Boas stimulated Haerlin, Helen Roberts, and (indirectly) Lila M. O'Neale to study the attitude of primitive artists toward their traditional norms, he did something quite different from anything Sapir accomplished in this phase of his activities.

In my opinion the author quite misconceives the attitude of ethnologists toward psychiatry. It would be impertinence for a student of culture to judge the interpretations of psychiatrists within their sphere of competence. But he has every right to say whether such interpretations illuminate cultural phenomena: any "refutation" of their points of view by him naturally holds only within his own field. Kluckhohn, as a matter of fact, admirably formulates (p. 614 f.) the objective reasons for anthropological coolness to much psychiatric writing. It is therefore unintelligible why he suggests undemonstrable "deep-seated, unconscious factors" (p. 596 f.) to account for this attitude. When a modern physicist rejects levitation, it is superfluous to ask whether it is because of an unconscious aversion from the empyrean.

Notwithstanding these strictures, the author's plea for closer cooperation of the two disciplines is to be heartily welcomed. Psychiatry has brought an enlargement of the ethnologist's horizon in indicating the need for far deeper study of infancy and of interpersonal relations. That can already be predicated on the basis of Dr. Cora DuBois' recent book on "The People of Alor" (Minneapolis, 1944), whose full significance cannot yet be assessed definitively. Further, we must be grateful for every scrap of knowledge that helps us understand such phenomena as visions or dreams. However, it must be psychiatric *knowledge*, not the esoteric speculative system of a psychiatric sect.

I am much less ready to admit Dr. Kluckhohn's claim that refinement of ethnographic techniques is greatly indebted to psychiatry (p. 616). Surely, personal documents, say, dreams, visions and tales of adventure, had been collected long before any "impact of psychiatry"; and though "anthropology has come to recognize the incompleteness of the question and answer method," this insight dates back to the initial application of common sense to field research. In a more recent paper<sup>1</sup> Kluckhohn meritoriously directs attention to the late Gilbert Wilson's writings. Wilson was an ethnographer born, but his methods (which I have seen in operation) owed nothing to psychiatry and very little to academic anthropology.

Hardly qualified to consider the remaining papers

<sup>1</sup> Louis Gottschalk, Clyde Kluckhohn, and Robert Angell, *The Use of Personal Documents in History, Anthropology and Sociology* (Social Science Research Council, Bulletin 53, New York, 1945), p. 88.

seriatim, I prefer to exemplify how in their totality they amply vindicate the prefatory promise that the volume is primarily a contribution to culture history. A historian of science, for example, will find that the course of psychiatry is typical of the progress of thought generally. In the eighteenth century, we learn from Shryock and Sigerist, mental cases—like the whole of mental life—were still largely the property of philosophers (pp. 9, 41); and in Germany the succeeding decades witnessed that radical switch from one extreme to another—from speculative medicine to an austere inductive approach—which so often confronts a student of the history of science (p. 41 f.). Incidentally, the spirit of the new era is illuminatingly revealed in Ernst Haeckel's letters to his parents during his Würzburg days as a student and assistant of Rudolf Virchow's. A similar contrast appears as regards curability, a gloomy tradition "that mental cases never recovered" being relieved by "the curability craze" of the thirties and forties of the nineteenth century, when asylum superintendents cheerfully proclaimed the restoration of ninety to a hundred per cent of their wards (pp. 17, 334). The temporary overestimation of special advances as though they implied a solution of all riddles is exemplified in the era of "brain mythology"—"psychiatry without psychology"—(p. 207) and of neurology as the sole scientific approach towards a study of mental disturbances (p. 291 *et seq.*). These several trends have repeatedly led to a partisanship which Dr. Whitehorn considers peculiar to psychiatric research (p. 177), but which must be expected in any rapidly developing and relatively new discipline. It is clear that as in other sciences the course of development is not one of unilinear advancement. World War I had already proved the inadmissibility to military service of the psychopathic, but the lesson had to be relearnt in World War II (p. 407).

Sociologists and anthropologists will hardly fail to note the importance of leadership in the theory and treatment of mental disease. It appears equally in the efforts of the laity and of the specialists, in Dorothea Dix's humanitarian propaganda for proper institutional care for "lunatics" (pp. 27, 280) or Clifford W. Beers's championship of the mental hygiene movement (p. 356 *et seq.*); in the earlier professional work of Isaac Ray (p. 67 *et seq.*) and Benjamin Rush (pp. 11, 481) and the later ascendancy of Adolf Meyer and William A. White (p. 298 *et passim*), the two thinkers who, above all, recognized mental diseases as "abnormal reactions of individuals to their human needs, in relation to their social setting." I was privileged to have fleeting contacts with these last-mentioned personalities, with Meyer in 1908 and 1909 when I qualified for the position of statistician and editor of the New York State Commission in Lunacy (a position I declined), with White in 1932 during my chairmanship of the Division of Anthropology and Psychology of the National Research Council. As possibly trifling sidelights on them I should like to register my impressions for what they were worth. It seemed to me that Meyer was doing the very sort of reformatory work my intellectual

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guides, Franz Boas and Ernst Mach, were attempting in their respective fields,—a quasi-epistemological critique that swept away catchwords and facile classifications in the search for what phenomena really were like. White impressed me mainly by his touching avidity for anthropological data. He assured me that if his budget permitted it he would at once attach an ethnologist to the staff at St. Elizabeth's.

To return to the factors underlying the rise of psychiatry, they are to be sought outside as well as within the professional sphere. Therapy rests partly on progress in the laboratory sciences, witness the shock treatment of recent years (p. 318 f.). But it was an ethical revolt that overthrew the practice of immuring the insane in jails, work houses and almshouses (pp. 5 f., 13, 27, 73, 99, 278, 333), and it is humanitarianism coupled with a deeper intellectual insight that now pleads the cause of the "morally insane" as irresponsible actors (pp. 507-584). Similarly, the history of psychiatry is bound up with the development of social welfare agencies grappling with such phenomena as juvenile delinquency and child guidance.

The awareness of the larger involvements of psychiatry that appears in most of the essays lends special charm to this splendid volume. As Malamud puts it, a comprehensive history of the subject "would have to tell the story of the development . . . of a hospital dining room, side by side with that of changes in the attitudes of judges and legislatures. It would have to trace the history of anti-luetic therapy or brain surgery as well as the developments of religious sects or popular prejudices." Indeed, virtually every chapter could serve as the text for an anthropological sermon illustrating the classical concepts of ethnology,—the organic interrelation of descriptively isolable cultural traits, diffusion, the relation of the individual to society, survivals out of harmony with the contemporary setting.

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AN INTRODUCTION TO PHYSICAL METHODS OF TREATMENT IN PSYCHIATRY. By W. Sargent and E. Slater. (Edinburgh: E. & S. Livingstone, Ltd., 1944.)

The attitude of the authors towards therapy in psychiatric practice is clearly indicated in the opening sentences of the book:

"It is a remarkable fact that, despite the popular notion that psychotherapy is the only method of treatment of psychological conditions, most of the big advances in psychiatric therapy have been along somatic lines. The malarial treatment of general paralysis is more recent than Freudian psychoanalysis, and can probably claim a larger number of cures. It is, in fact, possible to cure a patient of general paralysis, while the psychotherapeutic 'cure' of a neurotic patient is always a provisional matter. Since the introduction of malaria, we have seen the ap-

pearance of two new major methods of treatment, insulin and convulsive therapy."

Chapter I is a good summary of the insulin treatment of schizophrenia. In Chapter II, Weir Mitchell and his régime of rest, blood and fat are brought to the fore with the modern addition of insulin, in increasing doses beginning with 20 units and increasing enough to keep the patient quiet but eating well. "The aim is to stabilize the dose just short of producing sopor or early coma." For success the patients must be carefully chosen from among those who in addition to neurotic symptoms have been exhausted and depleted. Chapter IV describes the use of electrically induced convulsions; metrazol is considered outmoded. The use of convulsive treatment for schizophrenia and the neuroses is not recommended.

Chemical therapy is taken up in Chapter IV for epilepsy and Chapter V for a general discussion of sedation and stimulation. Of especial interest is the description of the use of intravenous barbiturates in Chapter VII. Diets, vitamins and endocrine preparations are briefly described and there is a chapter on prefrontal leucotomy and one on the malarial treatment of general paralysis. The last chapter is a very fair statement of the relation of psychological to somatic treatment. It is stressed that one should ride neither hobby. Both diagnosis and treatment must take all factors into account, and try to evaluate them properly. For example:

"Psychiatrists and neurologists are very apt to discover in the headaches of the post-concussive the operation of psychological factors, and to conclude therefore that the proper treatment is psychotherapeutic. The change that has escaped notice is that the psychogenic stimuli which now produce symptoms would not have been effective before the injury. The real disability is not a hysterical headache, but an increased susceptibility to hysteria. . . ."

The little book is well put together and readable. There are, of course, omissions, such as the treatment of status epilepticus. Also one would like to see references given for the names quoted so frequently in the text.

S. C.

LARGE SCALE RORSCHACH TECHNIQUES. By M. R. Harrower-Erickson and M. E. Steiner. (Springfield, Ill.: Charles C. Thomas, 1944.)

Large scale Rorschach techniques have aroused considerable interest in many fields and the publication of this book fills a definite need. The results of a great deal of investigation by the authors and other workers in the same field have been pulled together in a manner which will facilitate and stimulate more widespread application of these highly useful procedures. The book is divided into four parts, the excellent organization of which permits them to be summarized concisely.

In Part I there is a general discussion of group Rorschach techniques, with a review of the literature, including illustrations of the practical ap-

plications of the technique. Results of group testing are compared with other methods of evaluating personality, including school performance. The material is quite convincing and leaves no doubt as to the usefulness of the method. Specific directions for the administration and scoring of the group Rorschach are presented simply and clearly.

Part II deals with a discussion of research methods. Eight thousand responses have been evaluated in a painstaking manner from the viewpoint of location, determinants and content. There is nothing in the literature to compare with these carefully worked-out and beautifully charted standards. The subjects include normal adults, psychotics, college age individuals and a group of prisoners. By comparison of these diverse groups, it has been possible to determine accurately the stimulus-producing properties of each individual card. Such standards are of fundamental and lasting importance both in the evaluation of group Rorschach tests and in connection with the original individual technique.

Part III deals with the multiple choice method of applying the Rorschach technique to groups. In the case of the group Rorschach test, skilled workers are needed to evaluate the results. The multiple choice test was developed in an effort to permit tests to be given and scored by untrained persons. Here, in the opinion of this reviewer, the authors violate the fundamental principles involved in Rorschach interpretation by attempting to reduce the results to a numerical score. Part III also includes some chapters from the Division of Publications of the Bureau of Medicine and Surgery of the United States Navy. In these are reported the results of applying multiple choice techniques to military personnel. These authors concluded that when gauged by a numerical score the multiple choice Rorschach test is of limited value. They express greater optimism over the possibilities of utilizing the multiple choice method with trained Rorschach personnel to assess the findings. In this case, blind analyses were made from the interpretive principles of the individual Rorschach combined with "subjective clinical hunches." The authors felt the most accurate inferences could be drawn in the psychoneurotic sub-groups.

Part IV consists of a detailed tabulation of the content of the 8,000 responses originally studied. The tables give percentages of each type of content for each whole card and each important detail of every card. They are further subdivided into college age group, normal adults, prison inmates and psychotics.

Any person who has worked with the Rorschach technique is bound to experience a certain feeling of reverence and awe at the enormous amount of painstaking work which the authors have put into this most authoritative volume. The book is highly recommended as an essential part of any Rorschach reference library.

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CHILDBIRTH WITHOUT FEAR. The Principles and Practice of Natural Childbirth. By *Grantly Dick Read, M.A., M.D.* (New York and London: Harper & Bros., 1944.)

The author of this unusually interesting book has made a number of unique observations. He is a man with a great wealth of clinical experience, and one who recognizes that there is a close bond between the psychiatrist and the obstetrician.

Childbirth is a natural process. There are, however, certain individuals who have a low threshold for pain. These women require frequent sedation and plenty of assurance. Dispelling fears, many of which are groundless, should be part of the accoucheur's duties. Most fears are due to ignorance and the author has admirably explained this situation.

No book is ever satisfactorily readable unless the thoughts and teachings of the author are supplemented by a record of cases. This Dr. Read has supplied.

"Childbirth Without Fear" is a very readable and enlightening little book.

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THE ORIGIN AND FUNCTION OF CULTURE. By *Geza Roheim*. (New York: Nervous and Mental Disease Monographs, No. 69, 1943.)

To Haddon, Boas and their contemporaries of the last generation the vital need of anthropology was to record practices which were vanishing before the onrush of western civilization. They studied customs and their integration in the life of a community and both by comparative and analytical methods sought to show distributions and developments. Anthropology was essentially descriptive and historical in its methods; its field was the activities of groups, largely (to the British school at least) of non-European peoples. The anthropologist of today is more analytical in his approach. He is a social scientist as well as a descriptive historian, analyzing the causes of cultural change within groups as well as between groups, in the western world as well as among so-called primitive peoples. He uses the facts gathered by his predecessors, but he is willing and anxious to use them in relation to specific problems of education, of economics and of government. He has become more specialized; archaeology, physical anthropology and linguistics have developed their own techniques and own disciplines. Though the modern social anthropologist still deals with groups, studies of the individual and of his personal adjustments have become more important than in former years.

This change in anthropological approach is due in part to what may be called internal growth, and in part to the contributions of scientists in allied fields, using their special techniques and disciplines on the common problem of man. One approach unknown to the older anthropologists, is the psychoanalytical, of which Roheim is a brilliant and assertive exponent. "The Origin and Function of Culture" is an exposition of this method. He uses

the specific traits of primitive groups, but he studies them not only in respect to their own development, but to explain the origin of all human culture. This volume consists of three essays, on the problem of growing up, on economic life, and on sublimation and culture. Through psychoanalytic techniques he answers *why* man acts as he does in respect to these aspects of life with an assurance and a finality unknown to the traditional school of anthropology, and rare in any branch of the social sciences. No attempt is made to explain or substantiate the interpretations; it is therefore, a volume for the psychoanalyst, not for the social scientist at large. Using material from many parts of the world, and drawing on his own field experience in Australia, Normanby Island, and among the Yuma, the author analyses a wide range of practices within the general scope of his three main subjects; his conclusion is that all culture can be explained as a manifestation of the Eros.

This subject is obviously of major interest not only to the anthropologist, but to the psychiatrist and the student of all human history. In presenting his evidence, Roheim assumes that his readers are thoroughly familiar with psychoanalytic terminology; though this may be justified as a book for specialists, it would reach a wider public if written in simpler style. As it is, the value of many of his arguments are lost since they are unintelligible to many whom, it is fair to assume, he would wish to reach.

The study of man is the broadest of all subjects, needing and warranting cooperation from every angle of the social sciences. Psychoanalysis is one of these; Freud broke new ground in this connection, and Roheim's contributions have been of considerable importance. But it is doubtful whether the psychoanalytical approach (or any other for that matter) can answer every question of the development of human thought. Whether or not the author's interpretations of the meaning of practices are psychoanalytically correct is for the psychoanalyst to say; all are not convincing to the non-analyst. Another serious question (and one which the author recognizes) is whether conclusions based on the data of specific areas are of universal application. On this point, most anthropologists will disagree with Roheim. Supported by less than two pages devoted to Osiris, the author writes (p. 62):

"It is quite evident therefore that the type of agriculture which forms the basis of our own civilization, with the plough and the ox, was evolved on the genital level on the basis of the Oedipus attitude, and the castration complex."

Or, in regard to language and relying on evidence from Normanby Island, when he says (p. 100):

"Thus we see how the magic of language was evolved on the basis of the magic of love."

The origin of the domestication of animals is likewise explained (p. 69):

"It seems probably that the domestication of cattle was brought about by the cult of cattle,

or by cattle totemism, that is by the displacement of the Oedipus complex to cattle,"

and again (p. 71):

"Whether man adopted domestic animals as children (dog) or acquired them by identifying them unconsciously with the father and mother (cattle, horse) we find that activities which are originally due to Id causes acquire a secondary Ego function in the course of human history."

In substantiating his views, Roheim has chosen to emphasize certain aspects in the culture of different groups; whether such selections are truly objective may be questioned. He assumes (p. 3) that the shaman is both

"The typical representative of a Siberian tribe and the leader of the community";

and (p. 97) that

"In Central Australia we find a civilization based on the puberty ritual."

Another quotation (p. 80) brings out the author's views on the meaning of culture itself:

"Culture or sublimation is a series of defence mechanisms in a favorable phase of stabilization between narcissism and object-cathexis."

No one questions that the psychoanalytic approach has a definite value, but it is doubtful whether its proponents strengthen its case by such generalizations. Science moves slowly and psychoanalysts have ground to consolidate before the reader is prepared to agree with Roheim's concluding sentence (p. 100):

"Beloved by the Muse, the Mother Goddess, Man the Poet raises himself above Time and Reality with Delphic laurels."

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**FAMILY SITUATIONS. Introduction to the Study of Child Behavior.** By James H. S. Bossard and Eleanor S. Boll. (Philadelphia: University of Pennsylvania Press, 1943.)

Essentially a review of recent American literature—sociological, psychological and psychiatric—about family problems and relationships, this book presents a case for further and intensive research into the social structure and effect of the family.

The authors differ somewhat in their starting points. For Dr. Bossard, environmental and cultural factors are of primary importance in individual adjustment. He defines the family situation as including the sum of all stimuli within the family circle external to the individual, and he regards the family situation, so defined, as an environmental factor particularly worth investigating because of its crucial influence on the education and emotional development of its members.

Mrs. Boll's first concern is to distill from the literature a classification of significant family situations which might serve as the basis for further study. She seeks a classification analogous to that

of botany or biology. Her system of classification of family situations is interesting, even if one may not agree with her evaluation of the relative importance of ideas and observation in the process of analyzing data. Family situations are observed from three broad points of view: interpersonal relations within the family; certain social traits of the family—its size, organization, activities, values and goals; and finally, external factors influencing the family's life—its social and economic status, its neighborhood position and its health.

The bulk of the book consists of a detailed exposition of this classification of family situations, illustrated from novels and plays, from case histories, articles in the *Ladies Home Journal*, and other sources of all kinds. The analysis of each of the situations is, however, brief and general. The authors articulate their awareness of the danger of generalizing, a danger they do not altogether escape. They are describing family situations, they are not describing the effect of the

different family situations on the emotional lives of different kinds of people.

The conclusion is the most surprising and controversial part of the book. Sociology, according to the authors, including social psychology, is the academic discipline to undertake the lead in research on family situations. This, obviously, has in it elements of exclusiveness which may lead to difficulty. Can a small and interdependent unit such as the family really be studied apart from the people who make up family groups? Is there any meaningful way of describing family situations by words or phrases such as 'discrimination,' 'excess or inconsistency of affection,' for example, without evaluating the impact of such conditions on different personalities? Is not the collaborative effort of sociologists, psychologists, psychiatrists, and other students of society a more promising road to truth than further compartmentalization of academic disciplines?

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